











TB 43-PS-607, The Preventive Maintenance Monthly, is an official publication of the Department of the Army, providing information for all soldiers assigned to combat and combat support units and all soldiers with unit maintenance and supply duties. All information published has been reviewed and approved by the agency responsible for the equipment, publication or policy discussed. Application of the information is optional with the user. Masculine pronouns may refer to both genders.

**ISSUE 607 JUNE 2003**

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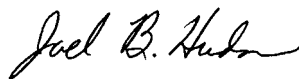
<http://www.logsa.army.mil/psmag/pshome.html>

By order of the Secretary of the Army:

**ERIC K. SHINSEKI**

General, United States Army Chief of Staff

Official:



**JOEL B. HUDSON**

Administrative Assistant to  
the Secretary of the Army

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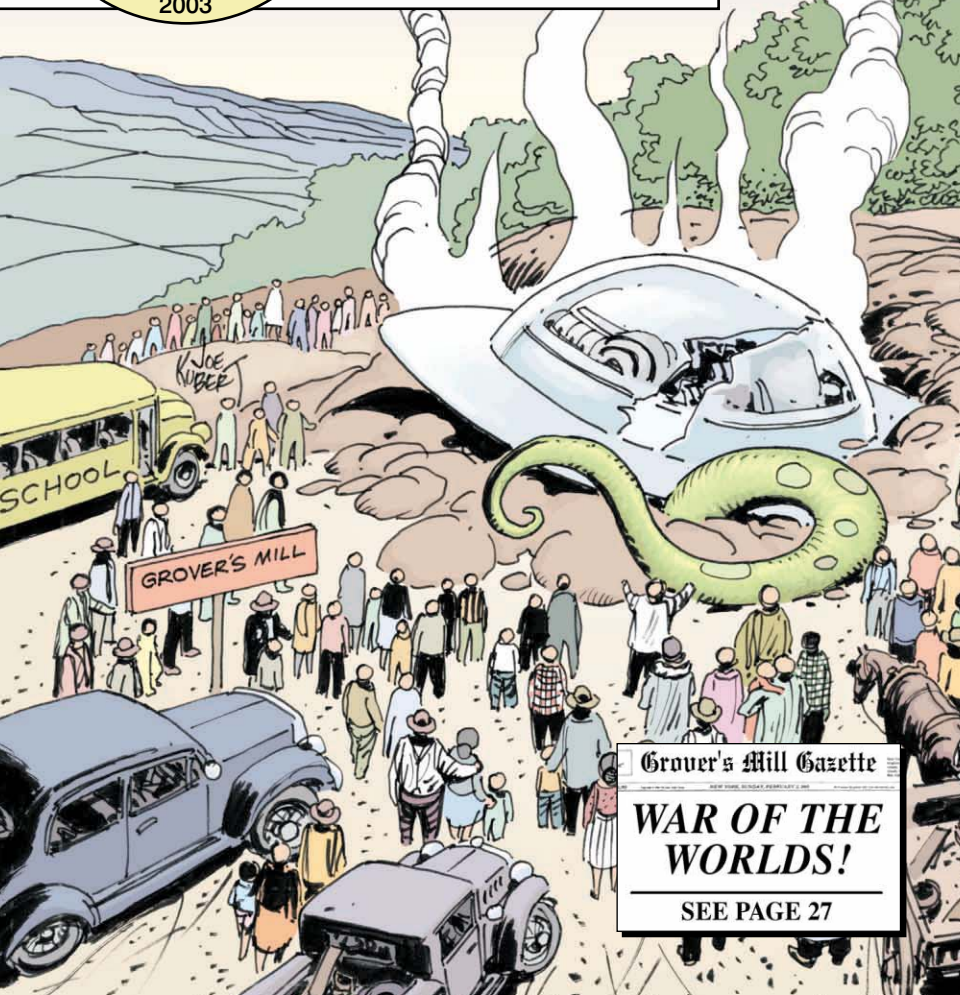
PS

June  
2003

# THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-607

Approved for  
Public Release;  
Distribution is  
Unlimited



Grover's Mill Gazette

**WAR OF THE  
WORLDS!**

SEE PAGE 27

# Pulling PM

"PULL THE STRING, AND IT WILL FOLLOW WHEREVER YOU WISH. PUSH IT, AND IT WILL GO NOWHERE AT ALL..."  
-GEN DWIGHT D. EISENHOWER



We spend a whole lot of time pushing preventive maintenance here at PS. Today, on this page, we would like to give a little emphasis to pulling it.

Who pulls the string that gets preventive maintenance accomplished?

The general answer is, anyone in a leadership position. The specific answer is the commander, the unit maintenance officer and unit sergeants.

Preventive maintenance starts in the office of the commander. The PM program under his or her command is only as good as the emphasis he or she gives it. If PM does not have a "starring role" in the commander's office, it will be no more than a "bit player" in motor pools and shops.

The weight of a good PM program falls heavily on the unit maintenance officer. If he or she spends all the time "firefighting," being reactive instead of proactive, preventive maintenance will not be done. Preventive maintenance must be an in-place plan that operates regardless of the fires. If PM is put on the back burner every time there is a fire, there will be a fire every time PM is put on the back burner.

Ultimately, a unit's PM program is only as good as the first line supervising sergeant's leadership. Only when that sergeant is on the job giving instruction, reviewing processes, encouraging those doing the maintenance and promoting the importance of PM, will the PM program be a successful one.











Eisenhower knew about leadership. He knew how to "pull the string." When it comes to preventive maintenance, if you are in a leadership position, make sure you are pulling the string so that the world's best equipment stays that way.



THE  
PREVENTIVE  
MAINTENANCE  
MONTHLY

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HMMWVs...

# TIRED OF TIRE TROUBLE?



WHADDYA THINK OF MY NEW HAIRCUT?

YOU MAY THINK BALD IS BEAUTIFUL, BUT MY TIRES DON'T!

NINE OUT OF 10 DRIVERS AND MECHANICS WILL TELL YOU THE BIGGEST PROBLEM THEY HAVE WITH HMMWVS IS TIRES.

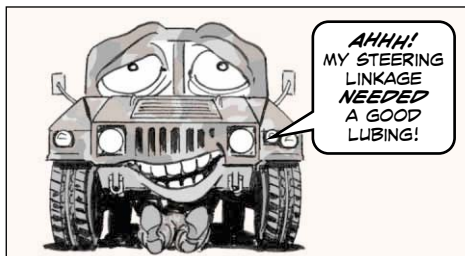
AND ONLY *ONE* OF 'EM WOULD BE *WRONG!*

MAKING YOUR HMMWV TIRES HOLD UP FOR THE LONG HAUL TAKES LOTS OF PM. SO LOAD UP ON THESE TIRE ESSENTIALS!

## Steering Linkage

You may think you can skip an inspection or lubing of the steering linkage every now and then. But when a linkage part fails and someone is injured or killed, you'll find out just how wrong you are!

A couple of inspections and a liberal lubing every six months or 3,000 miles (whichever comes first) is vital for keeping your HMMWV's steering linkage in good shape during normal operations. You'll need to up the number of inspections and lubings when operating in mud, snow or desert conditions, though.

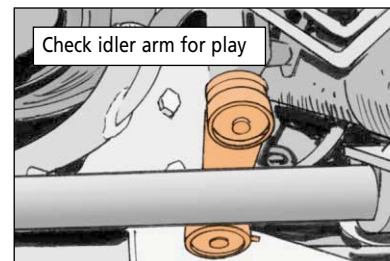


HERE'S WHAT YOU OPERATORS AND MECHANICS NEED TO DO TO KEEP THE WHEELS TURNING SAFELY...



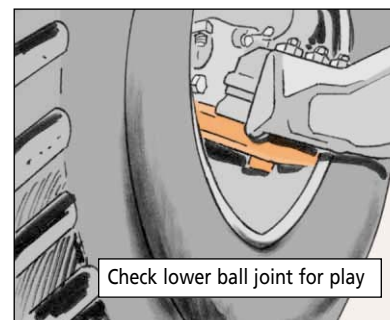
## • Idler arm:

Mechanics, check out Pages 8-54 through 8-57 of TM 9-2320-280-20-2 (Jan 96) and Pages 8-46 through 8-49 of TM 9-2320-387-24-1 for the procedures to measure play in the idler arm. No more than 1/4-in play is allowed.



## • Lower ball joint:

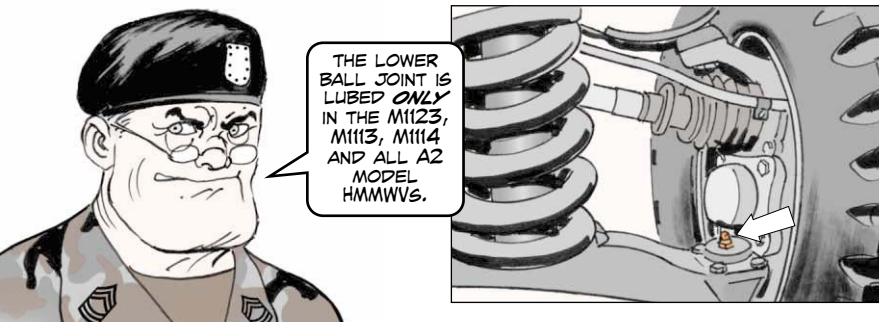
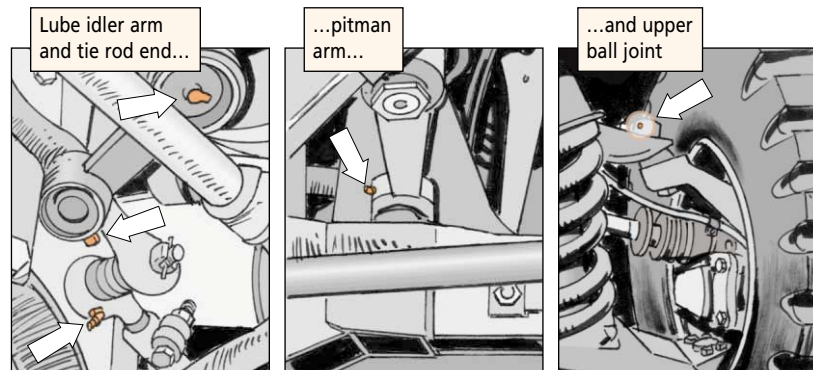
Mechanics, Page 6-60 of the 280-20-2 TM and Page 6-54 of the 387-24-1 TM have the procedures for measuring play in the lower ball joint. No more than 1/4-in play is allowed.





## • Lubing:

Operators, use GAA on the idler arm, tie rod ends, pitman arm, radius rod and upper ball joint as spelled out in the lubrication instructions in Appendix G of TM 9-2320-280-10 and TM 9-2320-387-10.



## Wheel Balancing

Generally, the steering wheel will shake when the front wheels aren't properly balanced. If the shaking gets serious enough, the wheel studs can loosen or break off, leaving you with no control over the vehicle as you move down the road.

To put an end to shaky driving, your mechanic needs to start with the bubble wheel balancer, NSN 4910-01-093-0167, from the No. 1 or No. 2 Common shop sets. Tire balancing procedures are found on Pages 8-30 and 8-31 of the -280-20-2 TM and Pages 8-22 and 8-23 of the -387-24-1 TM.



Wheel weights for balancing are listed in Fig 167 of TM 9-2320-280-24P-1. Here they are along with a few extra weights...

Size (Ounces)	NSN	Qty
1/2	2530-01-261-6844	50
1/2	2530-01-235-8688	360
1	2530-00-848-4581	1
1 1/2	6670-01-261-6845	50
2	6670-01-261-6846	50
2 1/2	6670-01-262-8646	50
3	6670-01-261-8011	50
3 1/2	6670-01-261-8012	25
4	6670-01-261-8013	1
5	6670-01-262-8647	25
5 1/2	6670-01-263-2268	25
6	2530-00-050-2064	1
6	2530-01-028-1307*	25
8	2530-01-027-6943*	1
16	2530-00-709-5922	1

\*Order on a DD Form 1348-6 and put "NSN not on AMDF" in the REMARKS block.



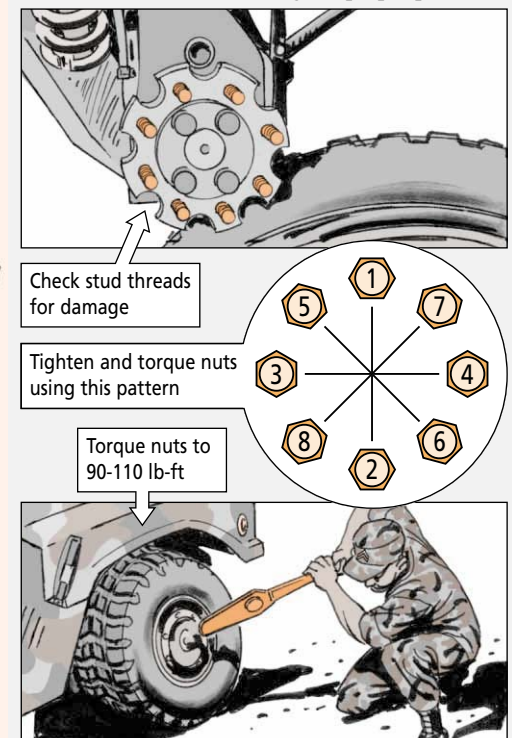
PS 607

## Tire Studs and Nuts

Loose stud nuts can also lead to serious shaking problems. So make sure studs and nuts are properly cleaned, inspected and tightened. Here's how:

- Use a wire brush to break loose dirt from studs. Clean the studs with soap and water and allow them to dry completely.
- Look for studs that are cracked, broken, rusted, pitted, bent, or loose. Pay special attention to the threads for damage. Replace damaged studs.
- Stud nuts have to be tightened gradually and in the proper sequence to avoid bent and broken studs. You'll find the right tightening order on Page 8-7 of the -280-20-2 and -387-24-1 TMs.

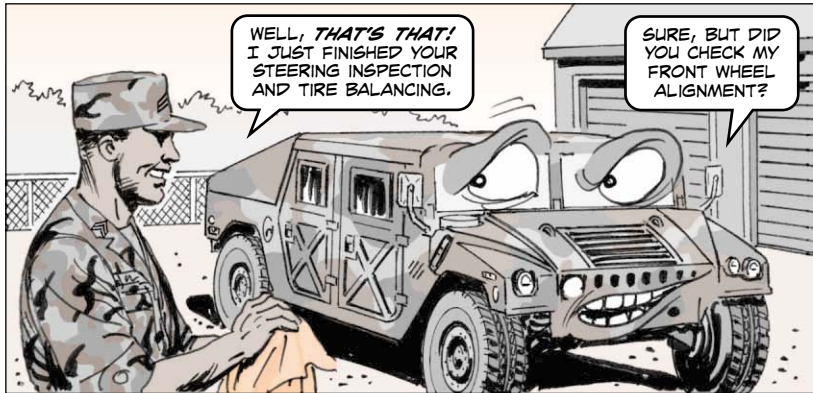
Tighten all the nuts by hand first, then torque the nuts to 90-110 lb-ft following the proper pattern.



5

PS MORE

## Front Wheel Toe-in Check and Alignment



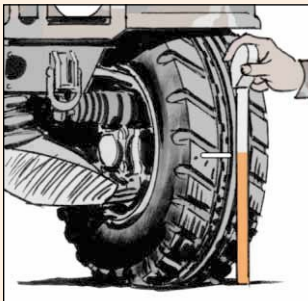
All the steering inspections and tire balancing in the world won't do much good unless you mechanics make sure the front wheels are properly aligned.

That means performing a front wheel toe-in check during every scheduled semi-annual or 3,000 mile maintenance interval. 'Course, if abnormal vehicle handling or control is reported earlier, you'll need to do it then, too.

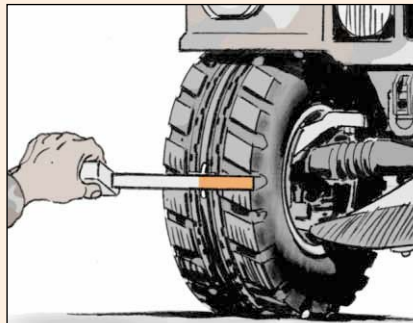


IF YOU'RE CHECKING AN M1037 OR M1042 MODEL HMMWV, MAKE SURE THE S250 SHELTER IS INSTALLED **BEFORE** PERFORMING THE TOE-IN CHECK. THEN FOLLOW THESE STEPS...

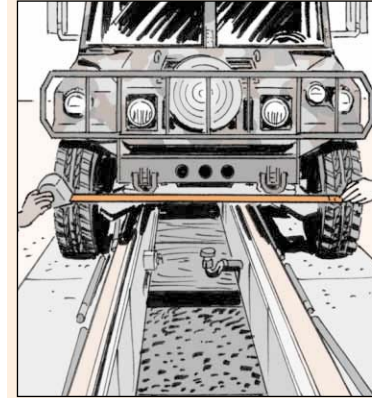
1. Place the vehicle on level ground with the wheels set straight ahead.
2. On the front side of a front tire, mark a line on the center tread 16 1/2 inches up from the ground.



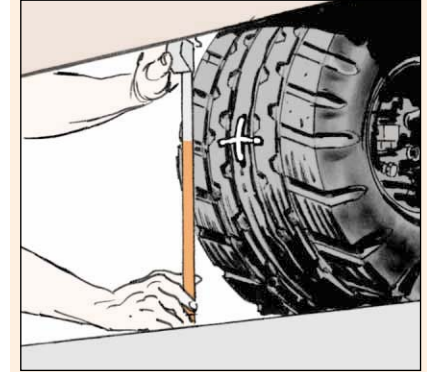
3. Mark a second line at the center point of the tire's width. At that point, both lines should form a +.
4. Repeat steps 2 and 3 for the other front tire.



5. Measure the distance between the center points of the two + marks and write it down.



6. Rotate the tires by moving the vehicle straight forward until the center points of the two + marks are 16 1/2 inches above the ground at the rear side of the tires.



7. Measure the distance between the center points of the two + marks again and write it down.

**NOTE: If the front-side tire measurement is larger than the back-side tire measurement, the tires have toe-out.**

8. Subtract the front-side tire measurement from the rear-side tire measurement. Then compare the result with the specifications in the following chart:

Vehicle Payload	Bias Tire		Radial Tire			
	Models: M998, M1025, M1035, M1038, M1043, M1044	Models: M966, M996, M937, M1036, M1037, M1042, M1045, M1046	Models: M996, M996A1, M998, M998A1, M1025, M1025A1, M1025A2, M1026, M1026A1, M1035, M1035A1, M1035A2, M1036, M1038, M1038A1, M1043, M1043A1, M1043A2, M1044, M1044A1, M1045, M1045A1, M1045A2, M1046, M1046A1	Models: M997, M997A1, M997A2, M1037, M1042	Models: M1097, M1097A1, M1097A2	Models: M1113, M1114
Vehicle at curb weight	7/16 ± 1/8 in.	5/16 ± 1/8 in.	1/4 ± 1/16 in.	5/16 ± 1/16 in.	5/16 ± 1/16 in.	1/4 ± 1/4 in.
Vehicle at normal operating weight (optional)	1/4 ± 1/8 in.	1/4 ± 1/8 in.	1/16 ± 1/16 in.	1/16 ± 1/16 in.	1/16 ± 1/16 in.	1/4 ± 1/4 in.





IF THE RESULT MEETS THE SPECIFICATION LISTED IN THE CHART ON THE PREVIOUS PAGE, YOUR VEHICLE IS IN ALIGNMENT.

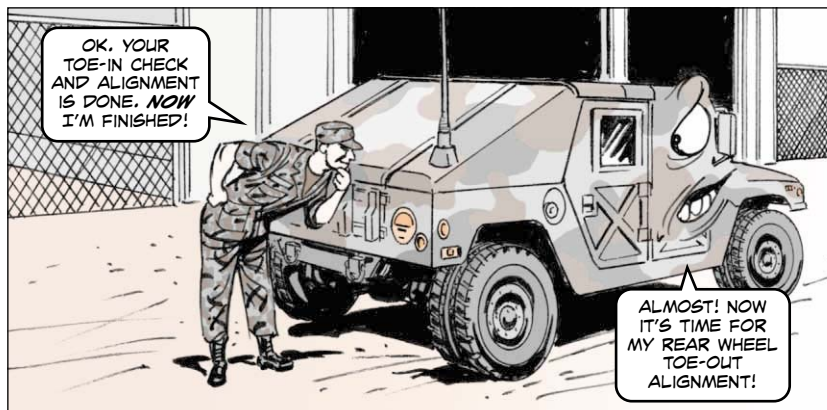
IF **NOT**, YOU'LL NEED TO ADJUST IT LIKE SO...

1. Loosen the two locknuts from the clamps on each adjusting sleeve.
2. Turn each adjusting sleeve an equal amount, but in opposite directions. For example, if the difference in measurement was 1 inch, you should turn each adjusting sleeve 1/2 inch. Remember, both tie rods **must** be the same length ( $\pm 1/8$  inch) after the adjustments have been made or the toe-in is out of adjustment.
3. Roll the vehicle backward and then forward to the original position.
4. Repeat the toe-in check and alignment until the measurement falls within the specifications outlined in the chart.
5. Retighten the two clamp locknuts to 30 lb-ft.



Loosen lock nuts and turn adjusting sleeve

### Rear Wheel Toe-out Alignment



OK. YOUR TOE-IN CHECK AND ALIGNMENT IS DONE. **NOW** I'M FINISHED!

ALMOST! NOW IT'S TIME FOR MY REAR WHEEL TOE-OUT ALIGNMENT!

1. Place the vehicle on level ground with the wheels set straight ahead.
2. On the forward side of a rear tire, mark a line on the center tread 16 1/2 inches up from the ground.
3. Mark a second line at the center point of the tire's width. At that point, both lines should form a +.
4. Repeat steps 2 and 3 for the other rear tire.
5. Measure the distance between the center point of the two + marks and write it down.
6. Rotate the tires by moving the vehicle forward until the center points of the two + marks are 16 1/2 inches above the ground at the rear of the vehicle.

7. Measure the distance between the center point of the two + marks and write it down.

**NOTE:** If the rear-side tire measurement is larger than the front-side tire measurement, the tires have toe-in.

8. Subtract the rear-side tire measurement from the front-side tire measurement. Then compare the result with the specifications in the following chart:

Vehicle Payload	Bias Tire		Radial Tire			
	Models: M998, M1025, M1026, M1035, M1038, M1043, M1044	Models: M966, M996, M997, M1036, M1037, M1042, M1045, M1046	Models: M996, M996A1, M998, M998A1, M1025, M1025A1, M1025A2, M1026, M1026A1, M1035, M1035A1, M1035A2, M1036, M1038, M1038A1, M1043, M1043A1, M1043A2, M1044, M1044A1, M1045, M1045A1, M1045A2, M1046, M1046A1	Models: M997, M997A1, M997A2, M1037, M1042	Models: M1097, M1097A1, M1097A2	Models: M1113, M1114
Vehicle at curb weight	7/16 $\pm$ 1/8 in.	5/16 $\pm$ 1/8 in.	1/2 $\pm$ 1/16 in.	1/2 $\pm$ 1/16 in.	1/2 $\pm$ 1/16 in.	1/2 $\pm$ 1/4 in.
Vehicle at normal operating weight (optional)	1/4 $\pm$ 1/8 in.	1/4 $\pm$ 1/8 in.	1/16 $\pm$ 1/16 in.	1/16 $\pm$ 1/16 in.	1/16 $\pm$ 1/16 in.	1/2 $\pm$ 1/4 in.



IF THE RESULT MEETS THE SPECIFICATION LISTED IN THE CHART, YOUR VEHICLE IS IN ALIGNMENT.

IF **NOT**, YOU'LL NEED TO ADJUST IT LIKE SO...

1. Loosen the two locknuts from the clamps on each adjusting sleeve.
2. Turn each adjusting sleeve an equal amount, but in opposite directions. For example, if the difference in measurement was 1 inch, you should turn each adjusting sleeve 1/2 inch.
3. Roll the vehicle backward and then forward to the original position.
4. Repeat the toe-out check and alignment procedures until the measurement falls within the specifications outlined in the chart.
5. Retighten the two clamp locknuts to 30 lb-ft.

# WIPE AWAY PRISM DAMAGE

MY PERISCOPE  
PRISM HOUSING HAS  
**CRACKED UP!**

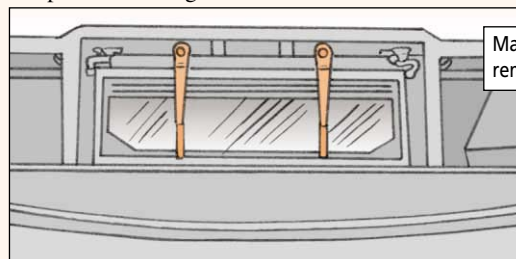
MY WIPERS  
WEREN'T IN  
THE RIGHT  
POSITION!

Jamming the driver's AN/VVS-2 night vision viewer into its mount without adjusting the wiper blades will break the viewer housing and damage the wipers and flexible shaft parts.

Normally, the wiper blades are left in the upper left or right positions so they're not in the driver's field of vision. But when the scope comes out, the wipers retract into the hatch housing just enough to become trapped between it and the night vision viewer.

Once you tighten down the wingnuts, the prism housing cracks and the wiper blades are damaged. To make matters worse, moving the handle to operate the jammed wipers can damage the flexible shaft and linkage parts of the wiper mechanism.

Make sure this doesn't happen by placing the wiper blades in the vertical position (straight up-and-down) and holding them away from the opening before removing the center scope just like it states in the -10 TMs. That way the wipers still work and the prism doesn't get cracked.



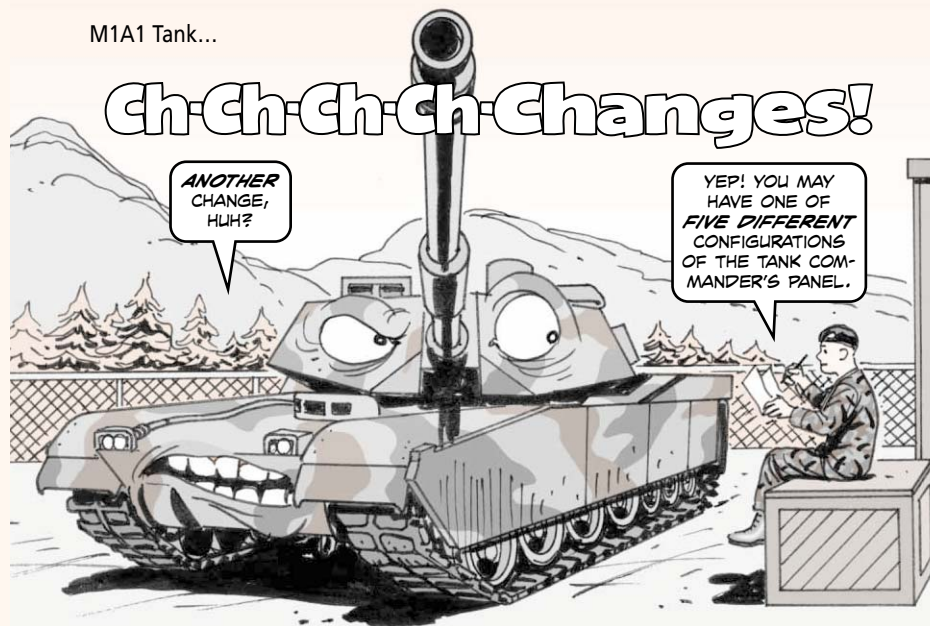
Make sure wipers are vertical **before** removing center scopes

Use the same procedure when you remove the night viewer and reinstall the center scope to avoid damage to the wiper blades.

# Ch-Ch-Ch-Ch-Changes!

ANOTHER  
CHANGE,  
HUH?

YEP! YOU MAY  
HAVE ONE OF  
**FIVE DIFFERENT**  
CONFIGURATIONS  
OF THE TANK COM-  
MANDER'S PANEL.



Get out those stubby pencils, crewmen. It's time to make a change to your M1A1 tank's -10-1 TM.

Page 1-45 on the tank's NBC system says there are only three configurations of the tank commander's panel. But now there are five.



There are now five configurations  
of tank commander's panel

So, until the TM is updated, replace Para 2 with the following:

**"There are five configurations of the tank commander's panel. Part numbers 9376322 and 9377879 will start NBC System when engine starts unless turret networks box circuit breaker CB3 is turned off. Part numbers 12549797, 12549797-2, and 12549797-3 will not start NBC System automatically."**

YOU'LL FIND  
THE PART NUMBER  
ON THE PANEL'S  
DATA PLATE.



# WHAT IT TAKES TO SHOOT STRAIGHT



GOSH!  
LOOK AT  
THAT  
BRADLEY  
SHOOT!

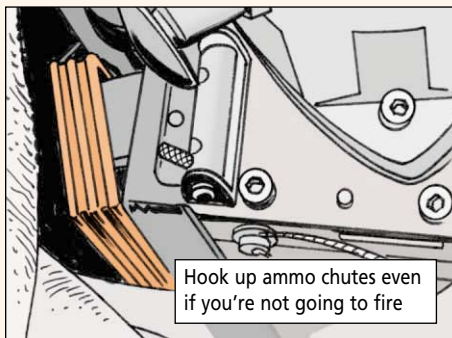
SOMEBODY  
PAID ATTENTION  
TO THEIR M242  
GUN PM!

SHOOTING STRAIGHT WITH  
PM FOR YOUR BRADLEY'S  
M242 AUTOMATIC GUN  
LEADS TO STRAIGHT  
SHOOTING IN THE FIELD.

AND YOU **KNOW**  
HOW EFFECTIVE THE  
M242 IS WHEN IT'S  
SHOOTING RIGHT.

**Remember to hook up the ammo chutes whether you're going to fire or not.** If the chutes are left dangling when you install the M242, the chutes catch on cables when the gun is raised or lowered. That damages the chute locking levers and can rip out cables and wiring and lock up the turret.

Damaged ammo chutes can be repaired with fitting repair kit, NSN 2320-01-268-7915.

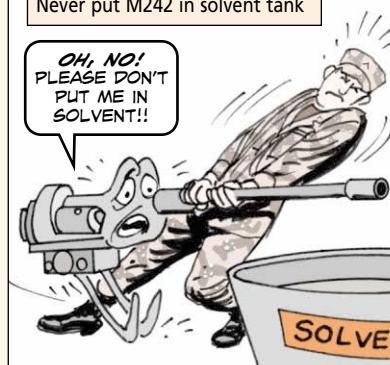


Hook up ammo chutes even  
if you're not going to fire

**Never put the M242 in the solvent washer or use CLP.** Solvent ruins the M242's seals, O-rings, and bearings. That means major repairs. For the same reason, don't use CLP for cleaning and lubing the M242. CLP breaks down graphite grease in gears, sprockets, and the track and bolt assembly, which quickly wears out bushings, gears, and bearings. It takes four hours for support to tear down an M242 and regrease it. Lube the M242 with GMD and general purpose lubricating oil like TM 9-2350-252-10-2 says.

Never put M242 in solvent tank

OH, NO!  
PLEASE DON'T  
PUT ME IN  
SOLVENT!!

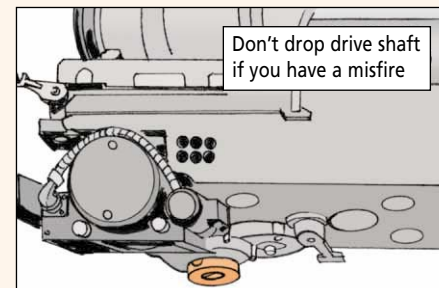


## Troubleshooting Help

If you have a misfire or jam, don't drop the vertical drive shaft. That throws off the timing between the receiver and feeder. Don't turn off the relay assembly. That clears out the logic from the turret distribution box and prevents firing. Your best bet is to ask the master gunner for help.

If the reticle jumps around during firing, you probably have a loose resolver. Tell your repairman. A loose resolver ruins accuracy. It's a good idea to have the resolver tightened before you go to the field.

If the M242 jerks from side to side, the traverse drive assembly probably needs to be adjusted. Tell your repairman.

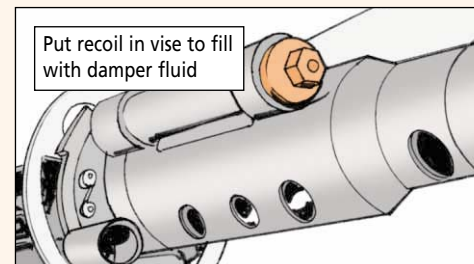


Don't drop drive shaft  
if you have a misfire

## Advice for Repairmen

When you fill the recoil mechanism with damper fluid, put the mechanism in a vise like TM 9-1005-200-23&P shows. Some repairmen try to just lay the mechanism on a table to do the job and end up bending the push rod. Then the whole recoil mechanism must be replaced.

Put recoil in vise to fill  
with damper fluid



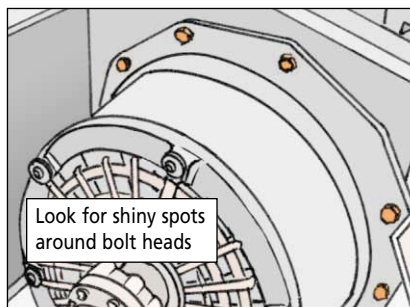
# GUARD AGAINST VIBRATION DAMAGE

IF YOU THINK  
*I'VE* GOT  
THE SHAKES,  
YOU OUGHT  
TO SEE MY  
VANE AXIAL  
FAN!



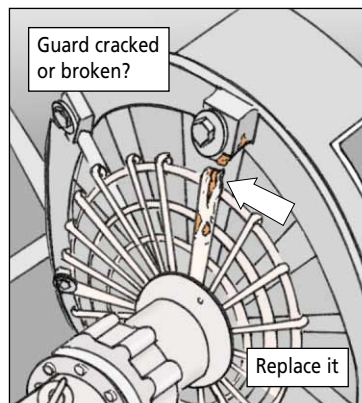
**T**hat old enemy, vibration, is claiming yet another victim: the vane axial fan on your MLRS carrier. Stress and vibration can cause one or more of the fan's mounting bolts to loosen or snap. If that happens, even more stress is put on the remaining bolts. Eventually, the vane axial fan can fall off.

During your PMCS, eyeball the mounting bolts closely. If you spot signs of loosening (shiny spots around the bolt heads) or missing bolts, report 'em.



While you're there, take a look at the fan drive guard, too. Vibration can weaken and snap the guard at its mounting bolts. When that happens, the guard can fall into the fan blades.

Look for cracks or breaks to the guard and report any you see. Your mechanic can replace a damaged guard with NSN 4140-01-315-3959.



# LIFTING SLINGS A REAL GRIND

**H**aving a hard time slipping the powerpack sling hooks in place when pulling a combat vehicle pack?

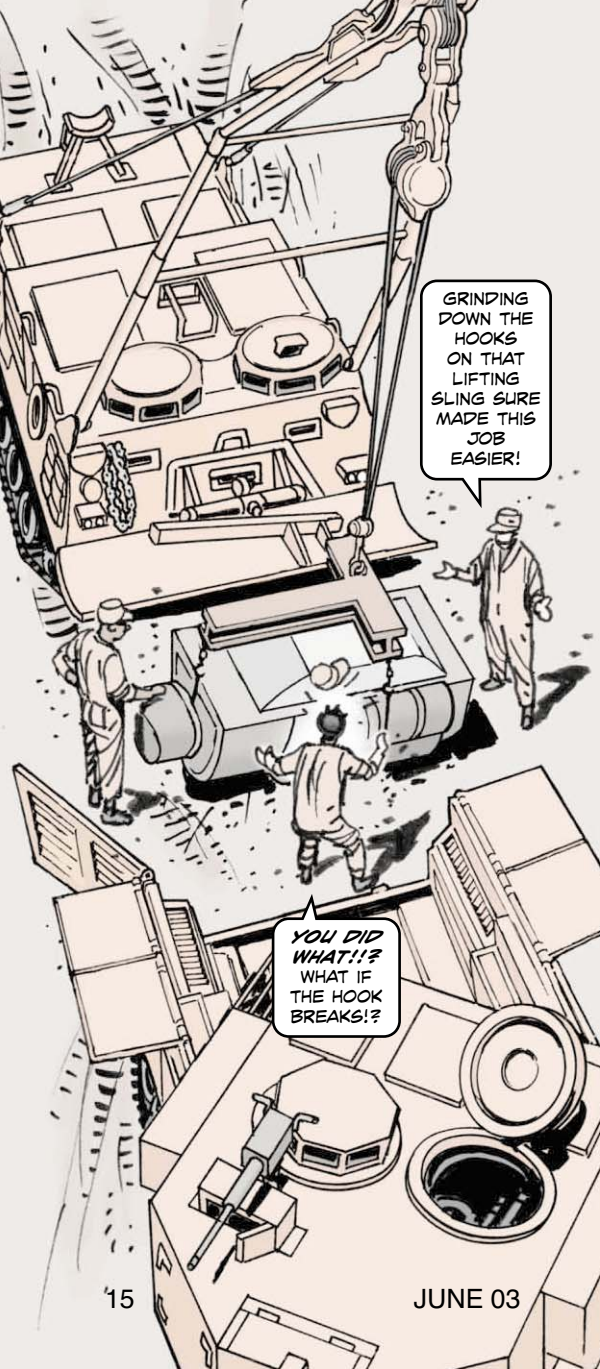
Some mechanics make the task simpler by grinding down the hooks a bit. That lets the hooks slip in and out of the lifting eyes a little easier.

Those same mechanics are in serious danger! Grinding down hooks, spreaders, chains or cables for any lifting device compromises its lifting strength. The device could give out during a lift, crushing equipment and maybe even you!

So take a close look at all your lifting devices. If they have any components that have been ground down, replace 'em right away.

GRINDING  
DOWN THE  
HOOKS  
ON THAT  
LIFTING  
SLING SURE  
MADE THIS  
JOB  
EASIER!

**YOU DID  
WHAT!?!?  
WHAT IF  
THE HOOK  
BREAKS!?!?**





# KEEP WATER OUT OF FUEL

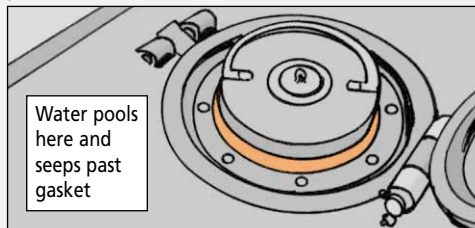


Water in the fuel system of your M109A2-A5 howitzer is trouble. It promotes the growth of microorganisms that clog fuel lines and filters.

Wondering how water gets in the fuel? Look no farther than the fuel filler neck opening.

Water pools around the filler neck opening. If the fuel cap gasket is old or worn, it lets water seep past and go straight into the fuel system.

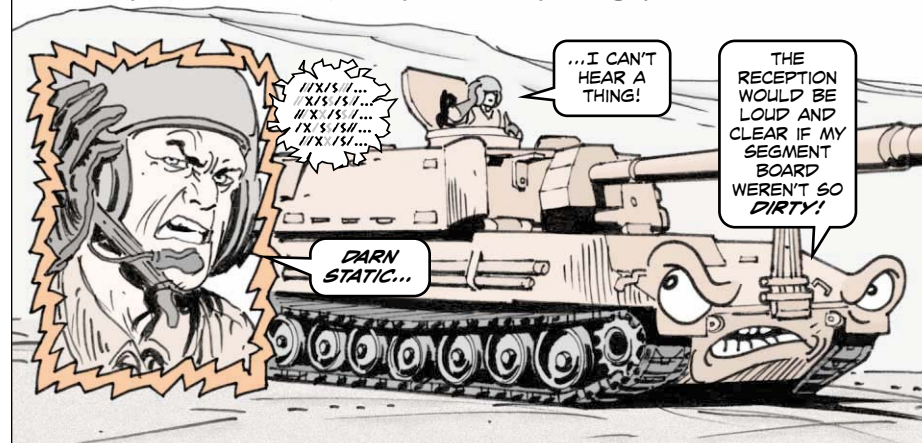
So eyeball the gasket, NSN 5330-00-179-0414. If it's missing, torn or cut, have your mechanic replace it following the procedures on Pages 6-4 and 6-5 of TM 9-2350-311-20-1.



THEN  
PREVENT  
FURTHER  
WATER  
PROBLEMS  
LIKE THIS...

- Make sure the filler cap is snugged down tight after each refueling. A loose cap keeps the gasket from doing its job.
- Check for any visible damage to the cap or the filler neck. Dents or gouges prevent a good seal.
- Use a rag to soak up any water that has accumulated around the filler neck before fueling. If you don't, that water will pour into the fuel tank as soon as you open the fuel cap.

# Prevent Pad Problems



Crewmen, after you've cleaned the segment board on your Paladin, don't forget to remove the green pad from the cleaning block.

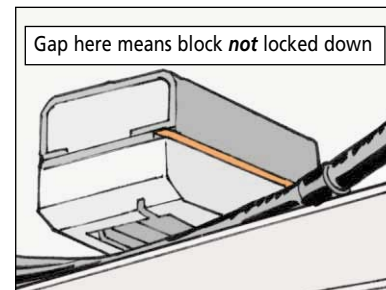
If you leave it in place, dirt and other debris begin building up. The pads eventually make contact with the segment board causing interference and distortion on the intercom.

When you **do** remove the pad, make very sure that you get the block locked back down on the cleaning mechanism.

If it's not locked down properly, vibration makes the cleaning block pop up. In that position, the cleaning block rubs against the segment board until—zap!—the segment board shorts out. You're left without turret power or commo.

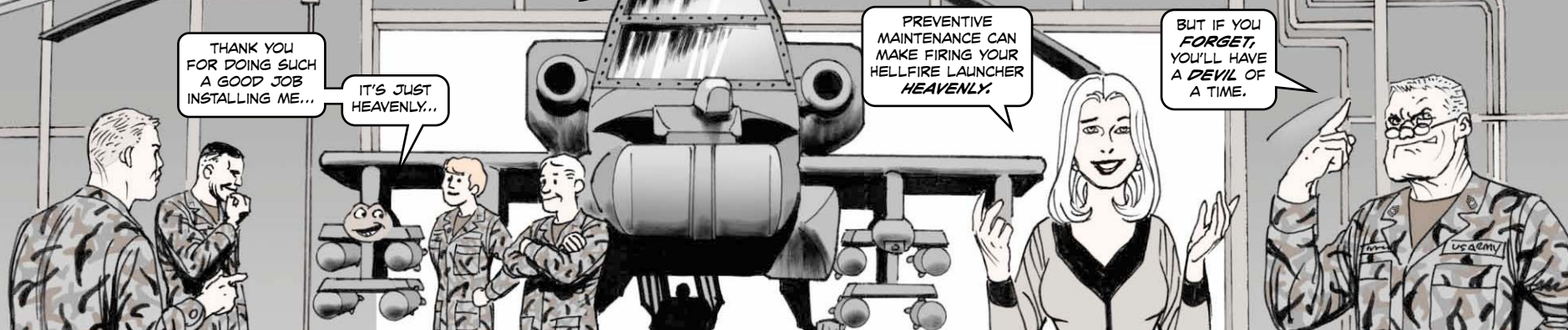
Ensure the cleaning block is locked down by eyeballing it. Look for a slight gap between the cleaning block and the cleaning mechanism. A gap means the cleaning block is not locked down. Try again.

No gap? The cleaning block is locked down and you're good to go.



# Heavenly Help for

# HELLFIRE LAUNCHERS

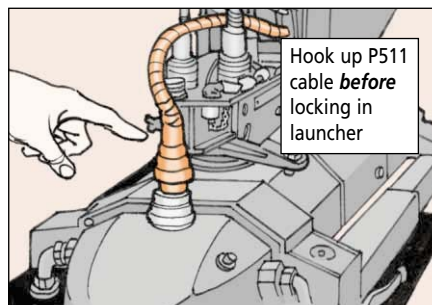
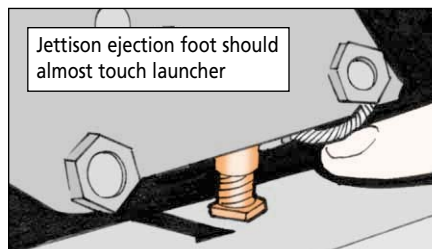


• Don't rush when you install the launcher. Just a little carelessness can damage items like the J511 umbilical connector. Repairers, not crewmen, install the launcher. That's repairers plural. Because of the launcher's weight and size, it takes four people to safely install it.

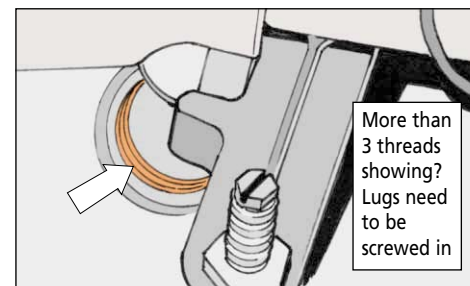
• Before you install the launcher, repairers, make sure the jettison ejection foot is up far enough to let the launcher clear it. If the ejection foot is screwed down too far, it can dent the launcher or make it difficult to lock in the launcher.

Once the launcher's installed, screw down the foot so that it almost touches the launcher. Otherwise, you can't jettison the launcher during an emergency.

• Hook up the P511 cable to the launcher's J511 connector before locking the launcher on the ejector rack. If you install the launcher first, you won't have enough clearance to maneuver the cable, so you'll strip the connectors or bend pins.

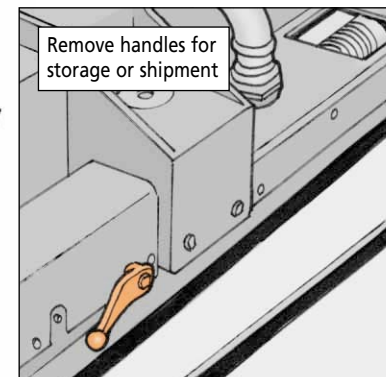


• After the launcher is installed, check the two suspension lugs. If you see more than three threads on the lugs, the lugs are not screwed in far enough and the launcher may not be secure. See Para 2-39 in TM 9-1425-475-23&P for information on tightening the lugs.



IF THE LAUNCHER IS TO BE SHIPPED OR STORED, IT'S A GOOD IDEA TO **REMOVE** THE LOCKING HANDLES.

OTHERWISE, THEY'RE PROBABLY GOING TO BE STEPPED ON OR BUMPED HARD ENOUGH TO BE DAMAGED. THEN THEY **MUST** BE REPLACED.

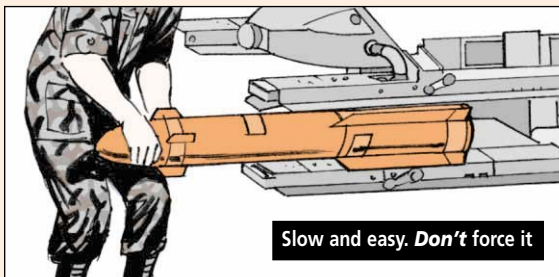




# LOADING MISSILES WITH CARE

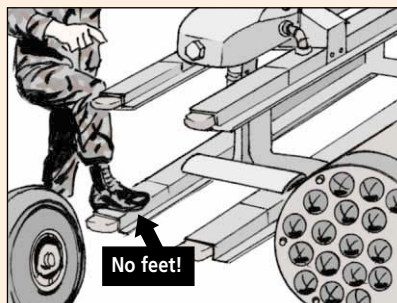
LOADING YOUR HELLFIRES WILL BE EASIER ON YOU AND THE LAUNCHER IF YOU LOAD UP ON THIS ADVICE.

**Take it slow and easy.** Slide the missile slowly down the rail. Watch the springs of the upper/lower rail wiring harness. When the springs slightly compress, move the holdback latch handle to the latched position.

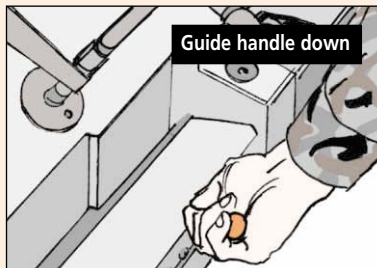


A Hellfire should slide easily into the launcher. If it doesn't, something is probably wrong with either the launcher, missile shoes, or umbilical connector. Jamming the missile in place will damage both the missile and launcher. So try loading a different missile. If that doesn't do the trick, ask your repairman to take a look.

**Don't put your feet on the launcher.** It's not a step. If you put your weight on the launcher, you can bend the rails or break the connectors. That puts the launcher out of business.



**Guide the locking handles into the LOCK position.** If you let the handles flip down, it wears out their springs and could damage the microswitch that tells you the missiles are locked in. It also wears out the missile mid-shoe.



# No LEG TO STAND ON

I'M FEELING A LITTLE SHAKY 'CAUSE MY TRIPOD NEEDS PM!

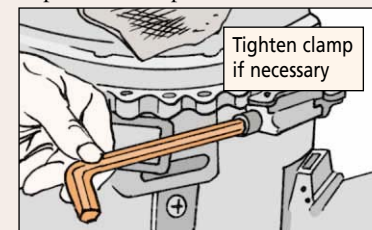


If you ignore your TOW's tripod, it won't have a steady leg to stand on. For a line-of-sight system like the TOW, that's the end of accuracy. Several units have even seen their weapons take a tumble because of tripod problems.

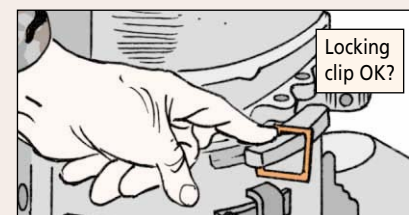
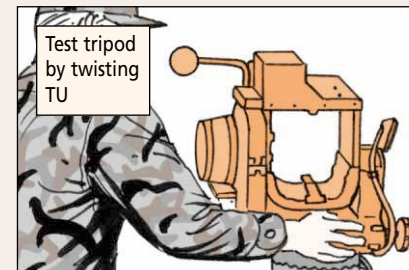
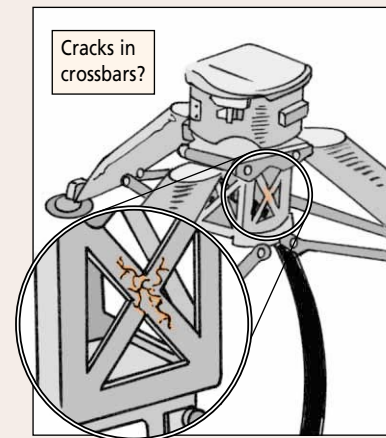
The best way to prevent tumbling TOWs is to pay attention to the tripod's locking clamp. If it works loose, the TOW takes a fall.

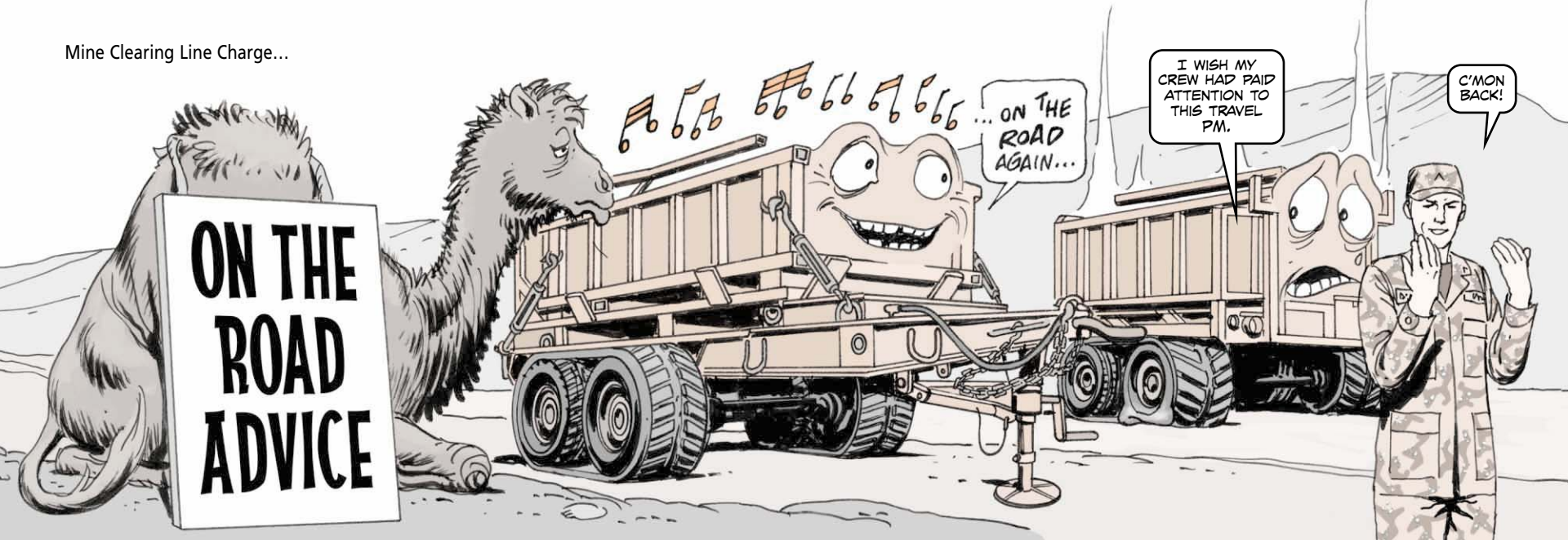
After you install the traversing unit (TU) and lock down the clamp, try to twist the TU back and forth. If there is **any** movement, tighten the clamp with a 3/16-in hex wrench, NSN 5120-00-240-5300.

Turn the TU again. If there's still play, it's time for a new tripod. Also make sure the locking clip for the clamp locks the clamp securely. If it doesn't, the clamp can work loose. Report a bad clip.

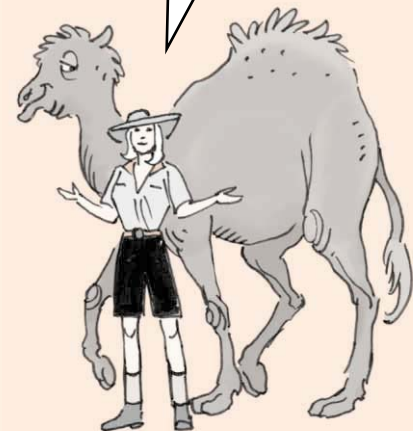


Last, check the tripod crossbars on all four sides for cracks. Just one crack signals the tripod is shot.

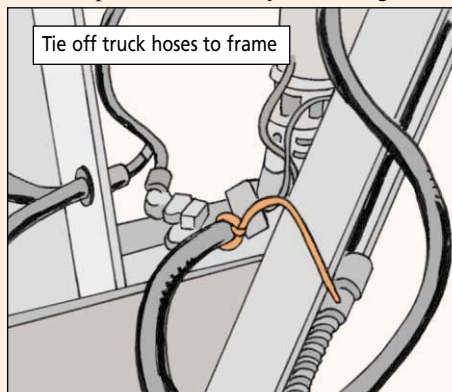




THE DIFFERENCE BETWEEN YOUR MICLIC BEING ON THE ROAD AGAIN OR SITTING BROKEN DOWN ALONG THE ROAD CAN BE AS SIMPLE AS HEEDING THIS TRAVELING ADVICE.



When you pull your MICLIC behind a tracked vehicle, tie the brake hoses to the trailer frame to keep them from dragging or getting torn off. You'll need the hoses to work the brakes when you pull the MICLIC behind a truck. When you use a truck, hook up the hoses, then tie up the hoses so they don't hang down.



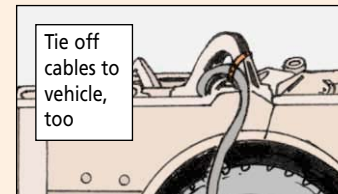
Tie off truck hoses to frame

Also tie off the electrical cables that go to the vehicle towing the MICLIC. The cables shouldn't drag the ground where they can catch on something and be ripped out. But you also should leave enough slack in the cables so that when the vehicle makes a sharp turn the cables won't be ripped loose. You may need to experiment with how much slack to leave in the cables and where the best places are to tie off the cables on the top of the truck or track. It's worth the trouble. The cables are expensive.

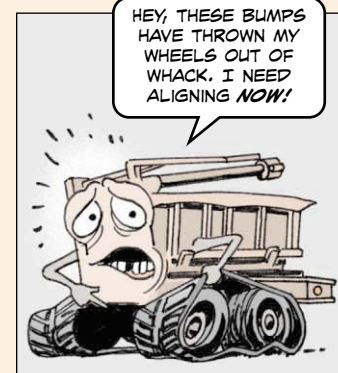
Keep brake hoses connected to keep dust and moisture out of the air brake system. When the MICLIC is just sitting, trailer brake hoses should be stored in the MICLIC trailer.

Because the MICLIC has both tires and track, it requires even more attention than the average vehicle. Rough country can quickly cause a wheel misalignment and before you know it a tire or track is ruined. Each track costs several thousand dollars.

Tie off cables to vehicle, too



HEY, THESE BUMPS HAVE THROWN MY WHEELS OUT OF WHACK. I NEED ALIGNING NOW!



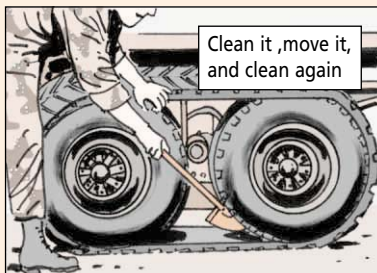
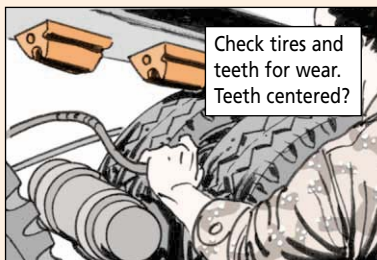


Before leaving the motor pool, check all 8 tires for gouges or bad wear, especially along the insides of the tires. Look at the track teeth for uneven wear. Check that the teeth are centered between the tires. If you spot problems, tell your mechanic. He can align the track with the procedure beginning on Page 4-38 in TM 9-2330-389-14&P.

The tire listed as Item 23 in Fig 5 in the -14&P is no longer available. Instead, order tire, NSN 2610-00-142-5389, and inner tube, NSN 2610-00-269-7373.

If you're traveling through heavy mud, clean between the tracks and tires at every stop. If too much mud gets packed between the track and tires, the track will come off. It's no easy job to get the track back on in the field.

Use the truck or APC pioneer tools to clean out the mud. Scrape out the mud, move the MICLIC forward and scrape out the rest.



REMEMBER, ANY TIME THE MICLIC GOES THROUGH DEEP MUD OR WATER THE WHEEL BEARING LUBE IS WASHED OUT.

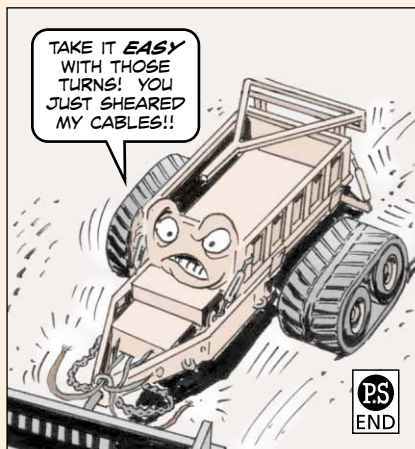
WITHOUT LUBE, THE BEARINGS WILL SEIZE. LUBE THEM ASAP. THE LUBE CHART IS IN CHAPTER 3 OF TM 9-2320-389-14&P.



Make gradual turns and avoid dips. Turns that are too sharp let the back of the truck or track shear cables. Steep dips have the same result. If you can't avoid dips, take them slow.

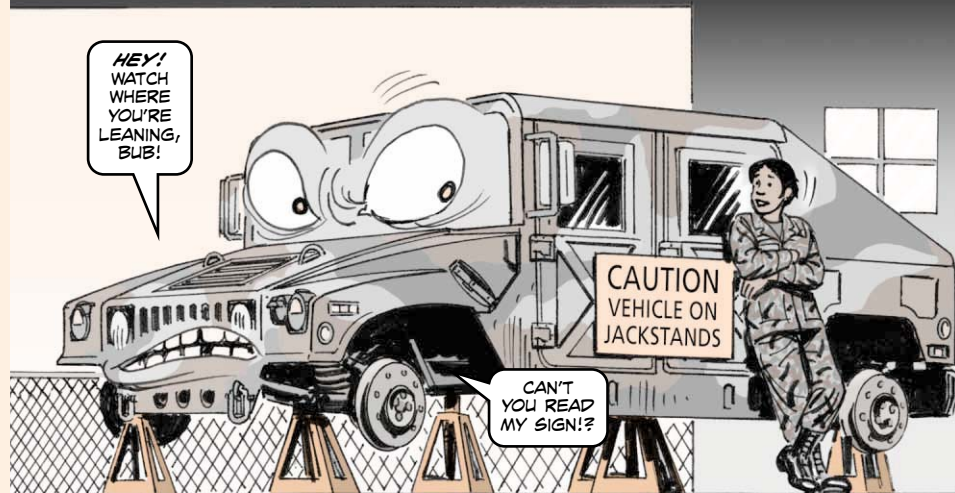
### M113A3

In case you haven't heard, you need a tow pintle extension, NSN 2540-01-458-4846, if you tow the MICLIC with a M113A3. Without the extension, the M113A3 bangs the heck out of the trailer and eventually the trailer has to be replaced. You don't need the extension with the other versions of the M113.



Jack Stands...

# SIGN OF THE TIMES



Dear Editor,

When jack stands are used on a vehicle, it's easy to overlook them, especially in the close confines of a motor pool bay.

For the safety of our soldiers, we've made it SOP to hang a warning sign on any vehicle that's on jack stands. Since the signs are easy to see, we've pretty much eliminated the danger of a soldier accidentally leaning against a vehicle on jack stands.

Motor Pool  
3/18th FA  
Ft Sill, OK

From the  
desk of  
the *Editor*



That's an  
outstanding  
safety  
suggestion!

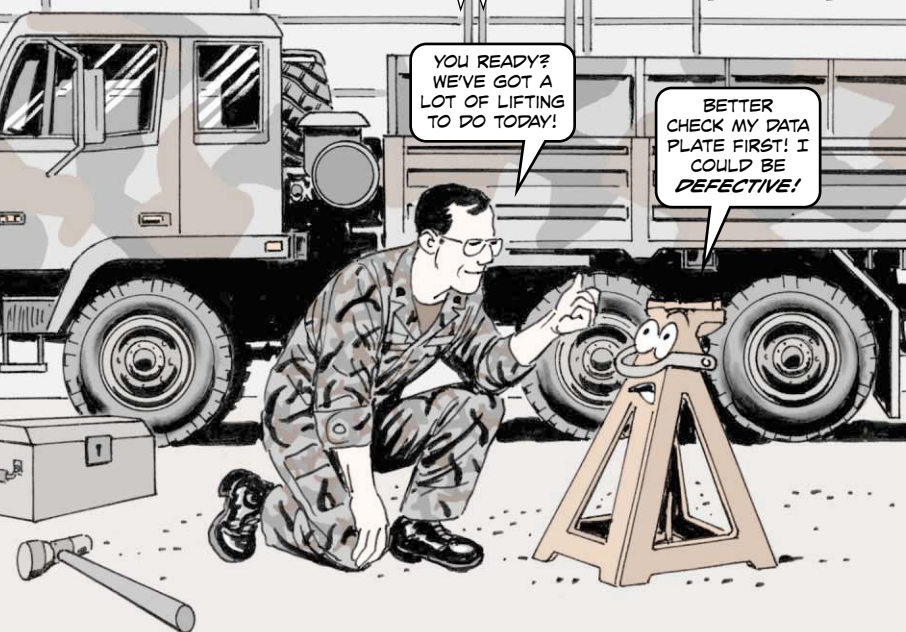


## Shop Equipment Bracket

The A1 version of the contact maintenance shop equipment vehicle, NSN 4940-01-333-8470, has an alternator bracket for the under-hood welder that's not strong enough. The bracket lets the alternator move too much, which results in loss of power to the welder, bolts breaking, and belts slipping off the pulleys. To get a stronger bracket and instructions on how to install it, contact TACOM-Rock Island's David Muller at (309) 782-4750/DSN 793-4750 or [mullerd@ria.army.mil](mailto:mullerd@ria.army.mil)



# THE TROUBLE WITH TRESTLES



We've said it before and now we'll say it again: If your unit has any 7-ton trestles (jack stands), NSN 3950-00-251-8013, they could be defective.

Trestles manufactured by Martinez and Sons, Inc., in 1979 have a defect that can cause them to buckle and collapse if the load is off-center.

Take a look at the data plate. If it lists the manufacturer as Martinez and Sons, Inc., and has a contract number of DAAA09-79-C-4216, you've got one of the defective trestles. The "79" in the contract number refers to the contract year—1979.

Defective trestles should be destroyed by crushing, cutting or any other method that makes them unusable. Trestles that are missing data plates and can't be otherwise identified, should be condemned, too.

Martinez and Sons, Inc., had several contracts for 7-ton trestles between 1979 and 1990. So, if your 7-ton trestle was made by Martinez and Sons, Inc., in any year other than 1979 or by any other manufacturer, it's OK to use.

SOU M 092030Z Oct 87 issued by CDR AMCCOM has the scoop. Write to Half-Mast at [psmag@logsa.redstone.army.mil](mailto:psmag@logsa.redstone.army.mil) for a copy.

# Grover's Mill Gazette

## THE TRUTH BEHIND THE WAR OF THE WORLDS



### Radio Listeners in Panic Many Flee Homes to Escape 'Gas Raid From Mars'

A wave of mass hysteria seized thousands of radio listeners throughout the nation between 8:15 and 9:30 o'clock last night when broadcast of a dramatization of H.G. Wells's fantasy, "The War of the Worlds," led thousands to believe that an interplanetary conflict had started. Invading Martians were spreading death and destruction in New Jersey and New York.

THE RADIO BROADCAST IN 1938 BY ORSON WELLES AND HIS MERCURY THEATER ON THE AIR DRAMATIZING A MARTIAN INVASION AT GROVER'S MILL, NEW JERSEY HAS BEEN A PART OF HISTORY FOR 65 YEARS. THE BELIEF WAS THAT IT WAS NOTHING MORE THAN A COMBINATION OF RADIO DRAMA AND A POPULATION ON THE EDGE. BUT... WAS IT?



### Artist's Conception

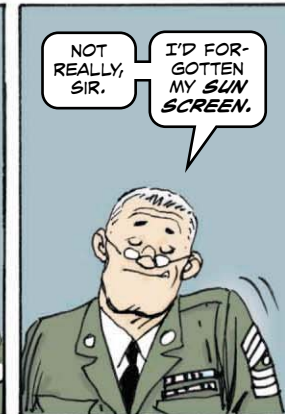
Sketch artist Joseph Kubacki delivered his version of the Martians at risk of gas injury to life traveling from Mars in Do-sey, he beaming his

Kilgus  
Sma  
Cart  
Crip  
Ame  
for V

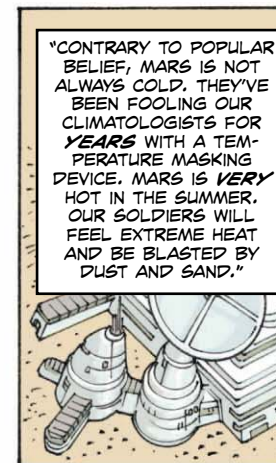




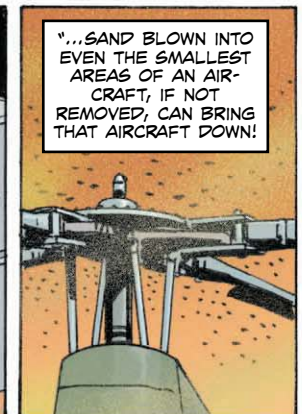
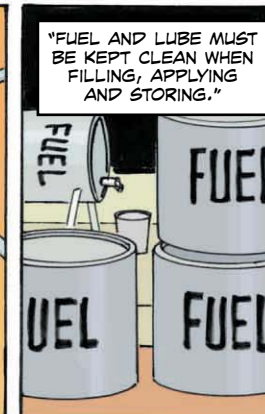
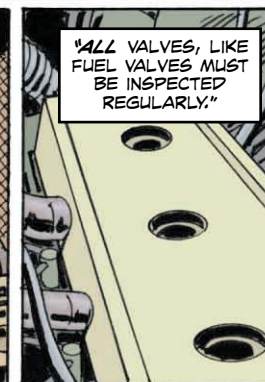
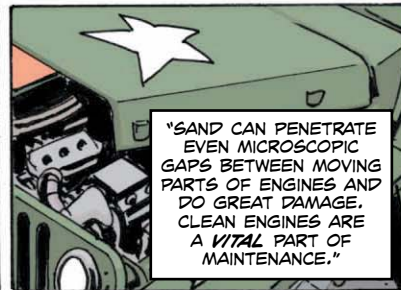
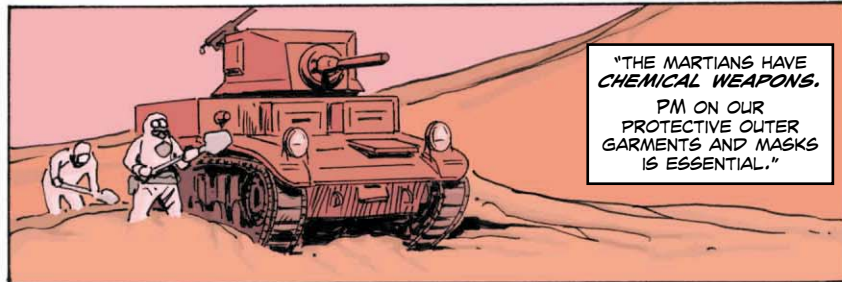
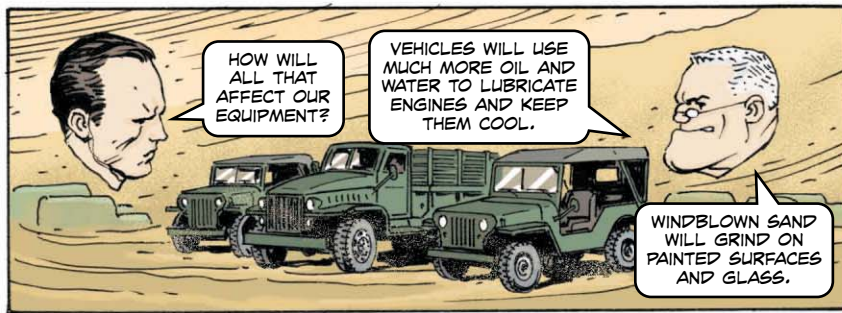
"...AND HOW WE NEED TO PREPARE OUR SOLDIERS AND EQUIPMENT FOR THE HARDSHIPS AHEAD."



BUT, ANYWAY... **MOST** OF MARS IS **DESERT**. LOTS OF MOVING SANDS AND ROCKY FLATS. BUT, I WAS SURPRISED TO FIND **WATER** ON MARS.









HOW WILL OUR **WEAPON'S SYSTEMS** BE AFFECTED?



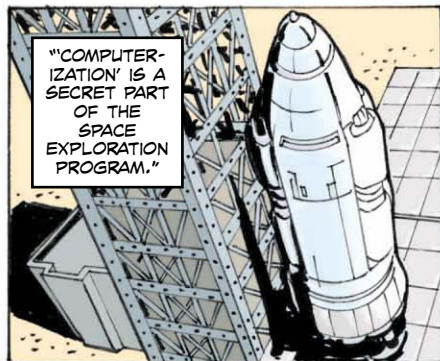
**HEAT** WILL BE OUR SYSTEMS' MAJOR ENEMY ON MARS.



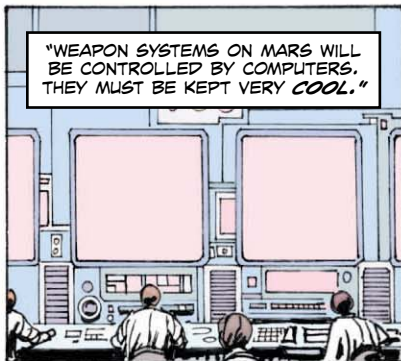
WEAPONS GET **HOT** WHEN THEY'RE FIRED.



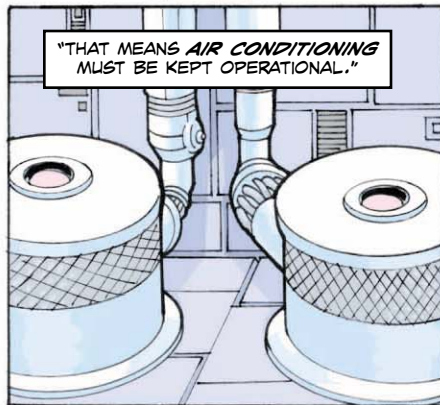
...AND WHEN THE TEMPERATURE'S HOT, THE WEAPONS GET **HOTTER**.



"COMPUTERIZATION" IS A SECRET PART OF THE SPACE EXPLORATION PROGRAM."



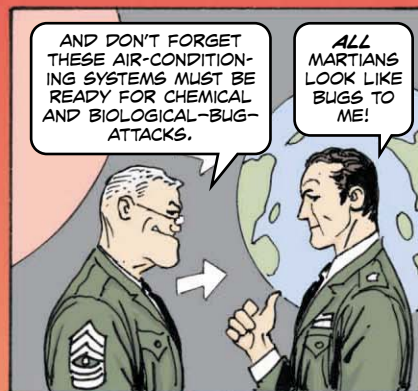
"WEAPON SYSTEMS ON MARS WILL BE CONTROLLED BY COMPUTERS. THEY MUST BE KEPT VERY **COOL**."



"THAT MEANS **AIR CONDITIONING** MUST BE KEPT OPERATIONAL."



"**FILTERS** MUST BE KEPT CLEAN AND COOLANTS AT A PROPER LEVEL."



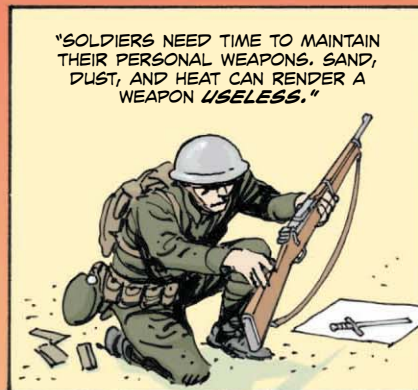
AND DON'T FORGET THESE AIR-CONDITIONING SYSTEMS MUST BE READY FOR CHEMICAL AND BIOLOGICAL-BUG-ATTACKS.

**ALL** MARTIANS LOOK LIKE BUGS TO ME!



YES, SIR. BUT **THOSE** BUGS MAY HAVE "BUGS"...

...AND WE'VE GOT TO BE READY FOR 'EM.



"SOLDIERS NEED TIME TO MAINTAIN THEIR PERSONAL WEAPONS. SAND, DUST, AND HEAT CAN RENDER A WEAPON **USELESS**."



FROM WHAT YOU TOLD US, ALL **ELECTRONIC EQUIPMENT** IS IN FOR A TOUGH TIME.



"YES, SIR. OUR MODERN ARMY OF 1938 **RUNS** ON ELECTRONICS."

"EXCEPT FOR A TENT AND A BACKPACK, A SOLDIER NEEDS ELECTRONICS TO **SURVIVE**."



"WE NOW HAVE COMPUTERS BUT LET ME ADD A FEW OTHER NEW THINGS."



• DIGITAL RADIOS



• NIGHT VISION DEVICES

"ALL THESE ARE SUBJECT TO SAND, HEAT AND MOISTURE DAMAGE. PREVENTIVE MAINTENANCE WILL KEEP THEM IN WORKING ORDER."

• RADAR SYSTEMS

• AIMING AND FIRING DEVICES



THANK YOU MASTER SERGEANT HALF-MAST. I THINK WE HAVE A BETTER PICTURE OF WHAT IT'LL TAKE TO WIN A WAR ON MARS.

BOTH THE MARTIANS AND THE ENVIRONMENT ARE OUR ENEMY. BUT, PREVENTIVE MAINTENANCE WILL ENABLE US TO DEFEAT **BOTH** ENEMIES.

LET'S SHOW THOSE MARTIANS WHAT UNCLE SAM AND HIS SOLDIERS CAN DO.

I'M READY ON YOUR COMMAND, SIR.

**EDITOR'S COMMENT:**  
WE TOOK THOSE MARTIANS TO SCHOOL AND TAUGHT THEM A HARD LESSON. WE LEARNED A FEW THINGS THAT HELPED US WHEN WE BAILED OUT EUROPE DURING WORLD WAR II.

THE MARTIANS ARE NO LONGER A THREAT, BUT THERE ALWAYS SEEM TO BE "MARTIANS IN EARTH-LING CLOTHING" WHO WANT TO RULE THE WORLD. SOME OF THEM WE MIGHT FIND IN ENVIRONMENTS SIMILAR TO MARS. IF WE DO, WE NEED TO BE READY WITH OUR GREATEST WEAPON: **PREVENTIVE MAINTENANCE.**

UH-60A/L...

# FILTER SLEEVE REMOVAL REVISITED

THIS NEW TOOL DOESN'T QUITE FIT ON THE OIL FILTER SLEEVE.

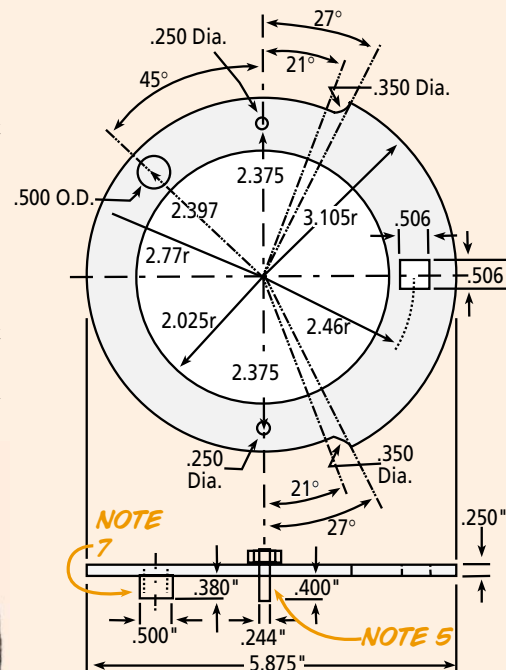
THIS ONE SHOULD DO THE TRICK!

**OOPS.** we goofed! On Page 37 of PS 596 (Jul 02), the drawing measurements to make the positioner tool are off.

The diagram did not show that the critical distance between the two pin bolts is 5 inches from the outside of the first bolt, across the center of the tool to the outside of the second bolt.

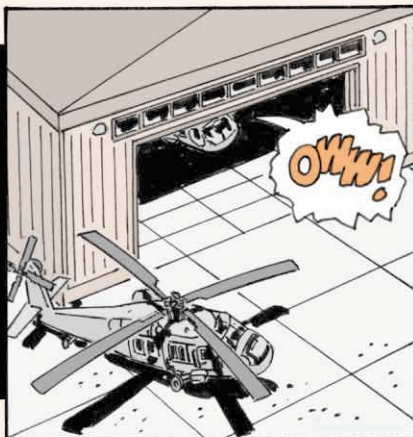
With the previous instructions the positioner tool won't fit properly, and you'll have to grind off about .030 inches from each bolt on the outside edge to make the tool fit.

HERE'S A CORRECTED DIAGRAM TO MAKE THE TOOL. MAKE A NOTE UNTIL THE TM IS UPDATED.





# STRAPPED FOR TIME



Dear Rotor,

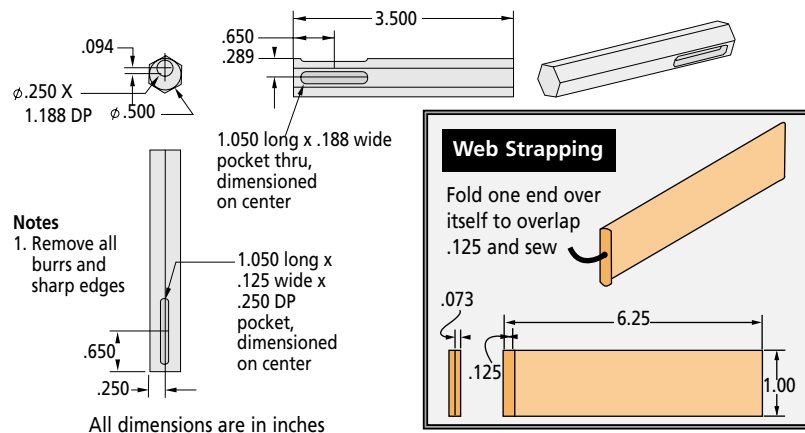
Banged-up knuckles show up first when mechanics work with tools in tight places on an aircraft. That's bad enough, but factor in the extra time it takes to maneuver a tool around in cramped space and you really get the picture.

Many Black Hawk cannon plugs require plug pliers to remove the plugs. In tight spaces, the pliers are ineffective in tight spots, and are almost impossible to use. And it takes a long time to loosen a plug.

But we've come up with a cannon plug strap wrench that can be a useful work aid in removing plugs much easier and faster without the bruised knuckles and wasted time.

Here are the plans to make the tool:

## Cannon plug strap wrench



After the tool is made, make the strap from 6 1/4-in of webbing strap, NSN 1680-00-967-1821.

1. Fold one end of the strap over and sew it so it's approximately .125-in thick. Burning the other end prevents unraveling and eases installation.

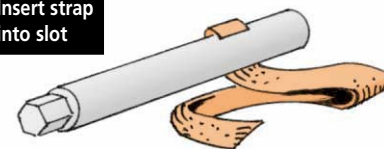
2. Insert the thin end in through the .188 slot and bring it out through the .125 slot.

3. Once it is started through the .125 slot, pull until the sewn end is through the .188 slot. Pull strap tight until the sewn end is nested clear of the .188 slot.

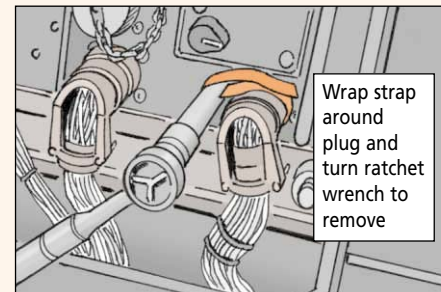
Use the strap wrench by wrapping the strap around the cannon plug and feeding the end of the strap through the .188 slot. Then pull it tight. Turn the wrench counter-clockwise to loosen the plug. Be careful not to damage receptacle pins.

Sgt Andres Chamorro Jr.  
MA Army National Guard

Insert strap into slot



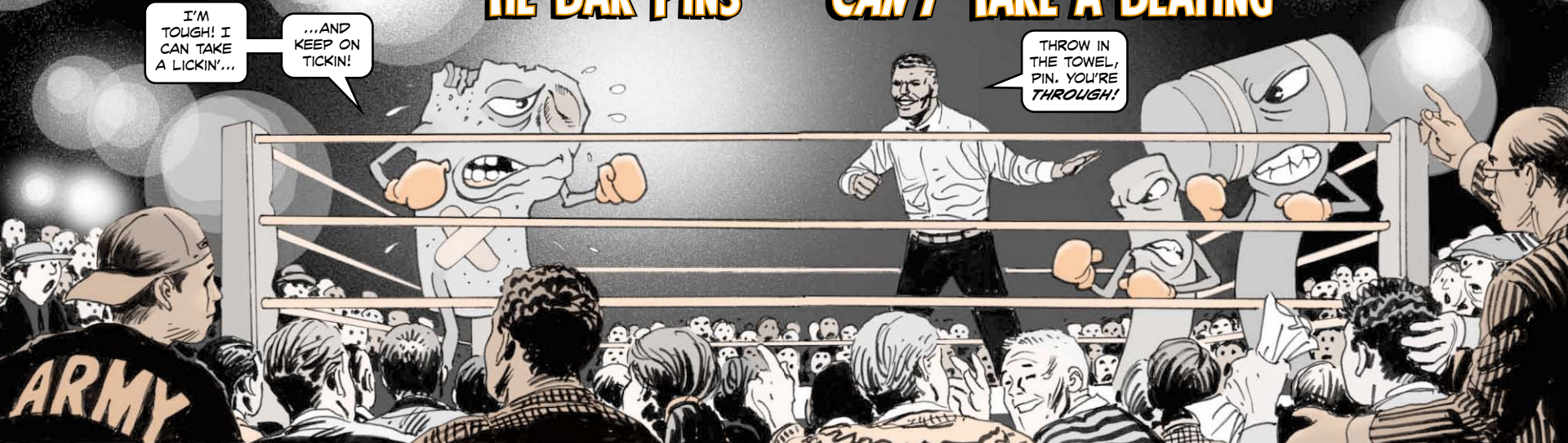
Wrap strap around plug and turn ratchet wrench to remove



Great tool! That's a wrap for this problem. *Rotor Blade*

## TIE BAR PINS

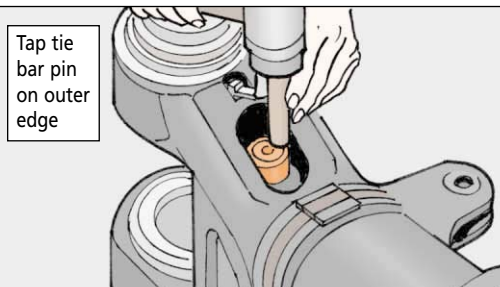
## CAN'T TAKE A BEATING



Chinook repairers, tie bar pins are **not** like a Timex. They can't take a lickin' and keep on tickin'!

So don't pound them in! Tap, tap, tap lightly is the way to go when you install tie bar pins into the rotary-wing head, like it says in Chapter 5 of TM 1-1520-240-23-6.

You have to remove the tie bar pins from the pitch housing and the hub shaft to visually inspect the tie bar. To replace pins, place the phenolic drift on the outer rim of the pins and tap in lightly with a soft mallet.

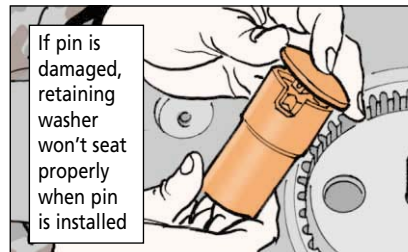


Damaged pin **can't** be used



If you pound on the tie bar pins instead of tapping on the pins, you can misalign the pins and they won't seat properly in the pitch housing and the hub shaft. Then the retaining washer won't seat properly on the pin in the hub, either. You'll wind up with damage to the rotary-wing head and the pitch housing.

Also, make sure you never tap on the inner surface of the pins, either. That'll push the inner portion out of tolerance. Then you'll have to replace them. If the pins are dropped on a hard surface, forget about tapping on them, too, because the pin's outer circumference will be flared out.





ELSE...

## DISTRESS MARKER LIGHT LEAKAGE



**ELSE**

techs, if you've noticed visible light coming from the housing of a SDU-39/N distress marker strobe light, you have a defective infrared red (IR) housing.

Inspect the light marker data plates for NSN 6230-01-411-8535 or NSN 6230-01-448-8340, and contract numbers SPO500-98-D-2710 or SPO560-00-F-0162.

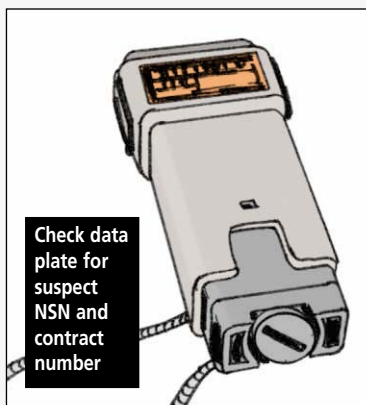
If you have any of these light markers, request replacement housings by calling Ann Schrage, Defense Supply Center Philadelphia, at DSN 444-8103 or (215) 737-8103, or email her at

[aschrage@dscp.dla.mil](mailto:aschrage@dscp.dla.mil).

Include in the request your unit, number of replacement housings needed, unit identification code, applicable NSN and a mailing address with a POC.

When you receive the replacement housings, remove the defective housings and return them to:

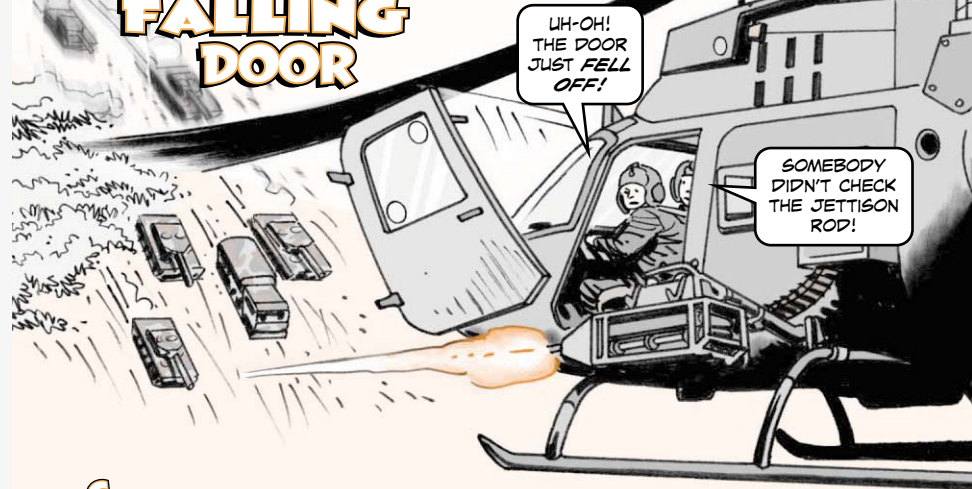
Industries For the Blind  
6350 Burnt Poplar Road  
Greensboro, NC 27409-9710



Install the new housings on the body like it says in PM ACIS message (AIS02-02) and test for light leakage at all angles. If no light leaks, you're good to go. Check out all the details in the PM ACIS message.

OH-58D...

## WATCH FOR FALLING DOOR



Crew chiefs, "look out below" might be what you'll holler if you lose the left hand crew jettison door when your Kiowa Warrior's .50-cal gun is fired.

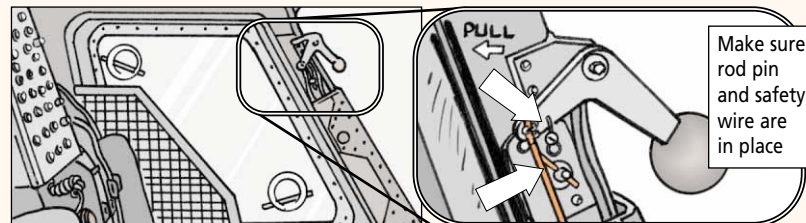
You can keep the door in place by performing a thorough pre-flight inspection first, like it says in TM 1-1520-248-10 and AMCOM maintenance information message 98-MIM005.

Make sure the jettison rod extends through the door hinge halves at least  $\frac{1}{2}$  inch and that the jettison release handle safety wire is secure prior to .50-cal gun firing missions.

If the safety wire is missing, or the rod isn't extended properly through the hinge halves or the pin is not in place, vibration will work the door mechanism free. Then the door falls off the aircraft as the gun fires.

Also be sure not to use the jettison handle as a handhold or a handrest. If that happens, you could accidentally jettison the door.

So don't let another door bite the dust. Pre-flight your bird before you take off and inspect the door mechanism like it says in TM 1-1520-248-PPM.



# LOW BATTERIES & BLOWN FUSES

THERE ARE SOME NEW KIDS ON THE BLOCK WHEN IT COMES TO LARGE TACTICAL QUIET GENERATOR (TQG) SETS. THESE KIDS ARE EQUIPPED WITH DIGITAL CONTROL SYSTEMS (DCS).

## WE'VE NAMED THESE KIDS

THE MEP-805B (30-KW, 50/60 HZ), NSN 6115-01-461-9335;  
MEP-815B (30-KW, 400 HZ), NSN 6115-01-462-0290;  
MEP-806B (60-KW, 50/60 HZ), NSN 6115-01-462-0291;  
AND MEP-816B (60-KW, 400 HZ), NSN 6115-01-462-0292.

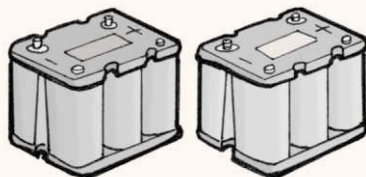


These new guys are pretty cool, but like all kids, they can be a bit cantankerous at times. One of those times is when the charge on the batteries is low.

When the batteries are low (from excessive cranking and not starting and operating the generator on a regular basis) and in need of a charge, operators reach for the NATO slave cable and get a battery boost from their vehicle.

PS 607

Batteries get low from being cranked



CRUNK switch in the CRUNK position, the R2 relay coil is energized to initiate engine cranking without energizing any other starting or control functions.

1.16.13.1.4 The generator set can be started without batteries by connecting an external 24 VDC power source to the NATO/SLAVE RECEPTACLE. The generator set can also supply power to another set through the NATO/SLAVE RECEPTACLE.

1.16.13.1.5 The batteries are charged by the battery charging alternator which is belt driven by the engine. The CIM display screen BATTERY

42

JUNE 03

So far, so good. But when the slave cable is removed and the generator is started, the 30 AMP in-line alternator fuse blows! The fuse will blow as soon as the battery charging alternator has an opportunity to charge the batteries. According to the digital readout on the display panel, 50-60 AMPS are pulsating through that fuse. With that much amperage, the fuse is going to do its job and blow. Then your generator is down for the count.

## Keep Extra Fuses

If you're operating one of these new DCS TQGs, keep extra fuses, NSN 5920-00-644-0366, on hand.

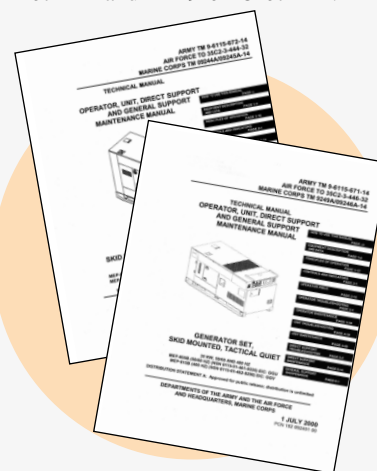
If you are in an emergency situation, you can jump around the fuse with some 16-gauge wire. Or run a second 30 AMP fuse in parallel with the first from the positive side of the battery to the positive side of the alternator. For safety reasons, neither of these are recommended as permanent fixes, though, and the generator should be restored to the single in-line 30 AMP fuse when the emergency has passed.)

Check for an ECP that increases the size of the wire to safely carry the full potential output of the battery charging alternator—it's rated at 45 AMPS continuous—and replaces the fuse with a 50 AMP slow blow circuit breaker. It also moves a wire so the batteries won't be drained if the fuse or circuit breaker should blow on start up. This should permanently fix the problem.

When these new generators arrive at your unit, bone up on the info in their TMs. TM 9-6115-671-24P handles the 30-KW and TM 9-6115-672-24P takes care of the 60-KW. They also have operator's manuals, TM 9-6115-671-14 and TM 9-6115-672-14.

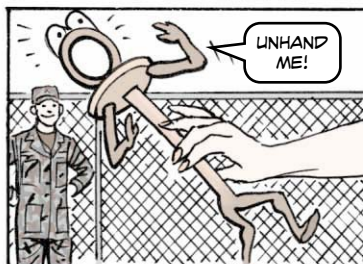
IT'S ALSO A GOOD IDEA TO CONTACT YOUR LOGISTICS ASSISTANCE OFFICE (LAO) AND GET A CECOM POWER GENERATION LOGISTICS ASSISTANT REPRESENTATIVE (LAR) ON THE JOB.

WE LARS WILL KNOW THE INS AND OUTS OF YOUR NEW GENERATOR AND CAN PASS ON SOME GOOD INFO.





# TQG DIPSTICKS



When your tactical quiet generator engine oil dipsticks take a walk, here are the NSNs to order new ones...

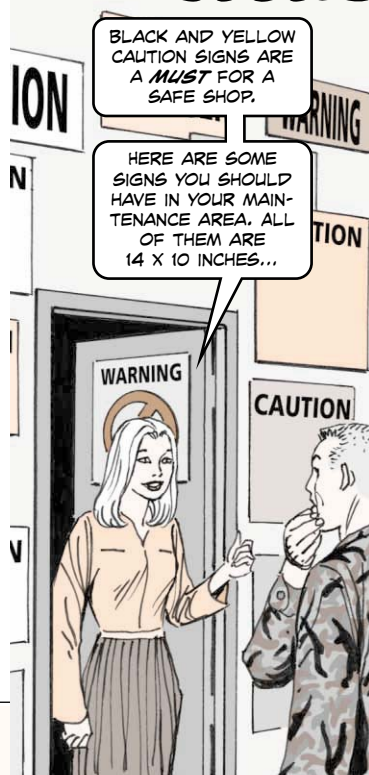
Generator	NSN 6680-01-
5-KW	457-8680
10-KW	472-8495
15-KW	472-9712
30-KW	363-0501
60-KW	363-0501

## PLGR PARTS

HERE'S A QUICK-REFERRAL LIST OF AN/PSN-11 PRECISION LIGHTWEIGHT GPS RECEIVER PARTS...

Item	NSN
AS-4333/V remote antenna	5985-01-375-4660
Remote antenna cable	6150-01-375-8662
Personnel carrying case	5895-01-375-7528
Lithium power battery	6135-01-440-7774
AA alkaline battery	6135-00-985-7845
Lithium memory battery	6135-01-301-8776
AC power adapter	6135-01-376-2168
Vehicular mount	5975-01-375-1302
External power cable	6150-01-375-8661
PLGR-to-PLGR cable	6150-01-375-8663
Personal computer cable	6150-01-375-8664
AA battery holder	6160-01-385-4358

# SIGNS OF SAFETY



Legend: Caution	NSN 9905-
Hearing Protection Required	01-100-8205
Hearing Protection Required in this Area	01-031-1247
High Noise Area Wear Ear Plugs	01-122-1140
Eye Protection Required	01-100-8203
Do Not Operate Without Eye Protection	01-100-8204
Highly Flammable	01-054-0428
Watch Your Step	01-054-0450

The **Highly Flammable** sign also comes in a smaller size, 7 x 10 inches, with NSN 9905-01-054-0427. One more 7 x 10 inch sign you might need is **Wear Goggles When Using This Machine**, NSN 9905-00-956-6324.

If you have noisy gear that requires a black and yellow noise caution plate, order it with NSN 9905-00-198-2728. The sign is 4.6 x 2.13 inches and has an adhesive backing.

Check out the US Army Safety Center's Safety Color Code Markings, Signs, and Tags Information Guide, February 2003. The guide provides a list of references for specific commodities, hazardous materials, and operations. The guide is not in electronic format, but you can obtain a printed copy by calling DSN 558-2062 or (334) 255-2062. Or send an email to: [ForehanS@safetycenter.army.mil](mailto:ForehanS@safetycenter.army.mil).

## 26-Pair Cable Connector NSNs

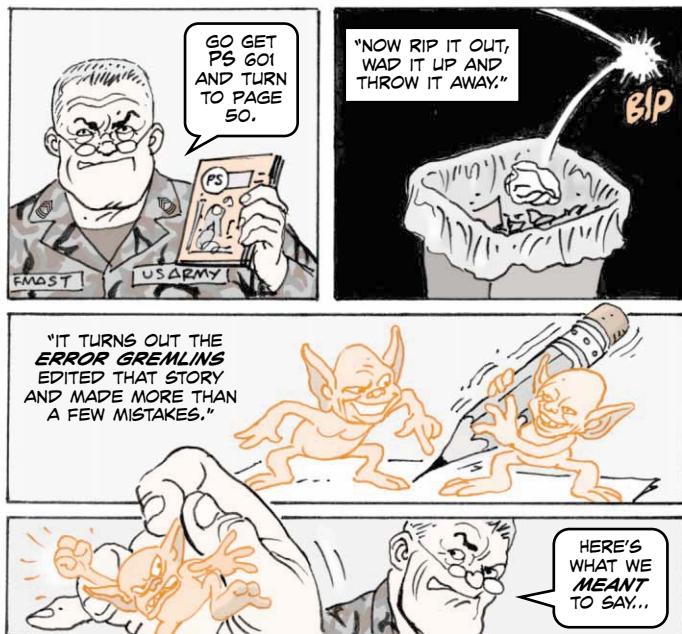


HERE ARE A FEW OF THE NSNs YOU NEED TO ORDER REPAIR PARTS FOR CABLE CONNECTORS...

Part	NSN
Electrical contact assembly	5999-00-823-3262
Hock cover	5935-00-883-4265
Wire rope	4010-00-575-6233
Swaging sleeve	4030-00-431-5536
Hock gasket	5935-00-542-1433
Hock rubber boot	5975-00-874-3541
Contact cap kit (enough for 10 connectors)	5999-01-073-5507
Electrical tape	5970-00-685-9059



## WHY THE "Y" BATTERY ARTICLE?

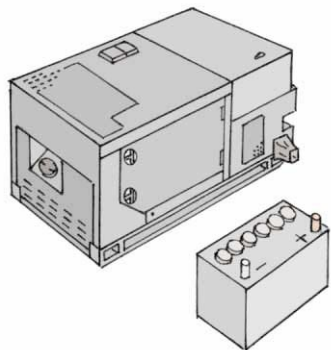


The wet battery for the 5-KW generator is the 2HN, NSN 6140-01-390-1969. The dry battery for the 5-KW is NSN 6140-00-057-2553.

The battery for the 10-KW is the Optima 800/U, NSN 6140-01-457-4439. This is a sealed, lead-acid battery that is virtually maintenance free.

The 6TMF and 6TLFP are vehicle batteries, not generator batteries.

We were right when we said the 6TN and the 6TL are no longer available for your generators, but then you probably knew that before we did the story!



## WHO KNOWS MWOs?



No one knows modification work orders (MWOs) like the Modification Management Information System (MMIS). And now you can know what they know by visiting their secure web site at: <https://www.mmis.army.mil>

Once there, click on the Login Request form icon and apply for a password.

Once you have your password, you can find MWOs—emergency, urgent or routine—by entering an equipment model number or its UIC or its serial number. Additionally, you can determine the MWO status of your serial numbered equipment end-items—which MWOs are applicable, which one have been applied, and which ones remain to be applied.

So far, the only MWOs on the site are those applied by an equipment program manager, an AMC major subordinate command or a MACOM MWO coordinator. So your equipment may not be there.

If it's not, then its MWO data has not been reported. You can remedy that situation by submitting MWO information on your equipment through the MMIS on-line reporting module or email it to:

**MMIS@calibresys.com**

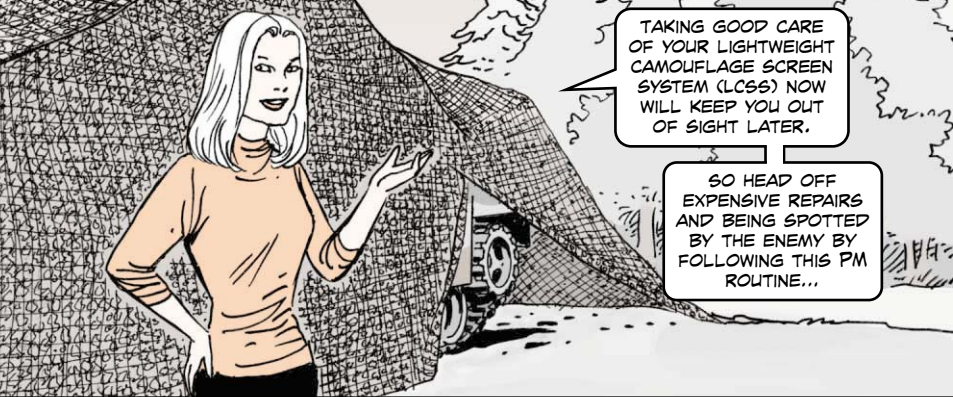
If you have questions about MMIS, contact Elizabeth Bieri, HQDA, at (703) 614-3895, DSN 224-3895 or email her at:

**Elizabeth.Bieri@hqda.army.mil**

The MMIS web site has been established as the official Army MWO database by the new AR 750-10, *Army Modification Program*.



# Out of Sight Camouflage PM

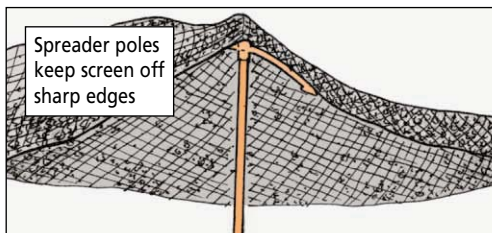
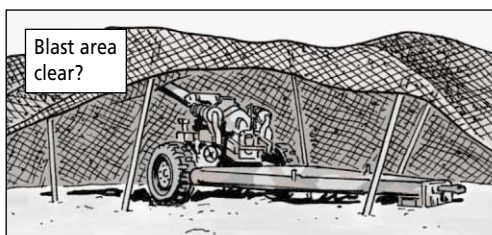
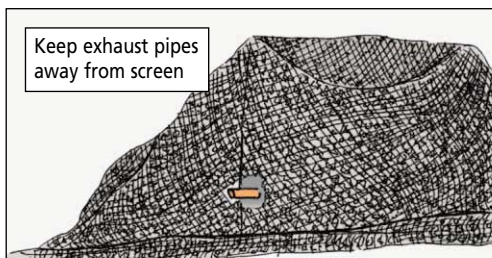


• Heat is murder on camouflage screens. They can melt or even burn if they touch anything hot, like a space heater or exhaust pipe.

Prevent this by cutting the screen and folding it back away from the hot pipe. Leave at least 8 inches between the pipe and screen edges. Make sure you repair the screen after it's removed from the vehicle or heater.

Keep screens out of artillery back blast areas, too. The screens are no match for that heat and power.

• Never spread screens right on top of equipment. Sharp corners, armament, bumpers, antennas, exhaust stacks and the like will rip them before you know it. Use batten spreaders to keep the screen away from sharp edges.



The batten spreaders for woodland/desert camouflage come with NSN 1080-00-108-1545. You'll also need an adapter, NSN 1080-00-108-1595, to connect the spreaders. For winter use, NSN 1080-01-073-3196 brings a batten spreader for LCSS snow camouflage. NSN 1080-01-081-1022 gets the adapter.

• When using aluminum stakes to tighten screens, be sure the stakes catch only the screen's edge cord. Screen material wrapped around the stake will tear.

Need new stakes? NSN 1080-00-108-1654 brings a stake for LCSS woodland/desert camouflage. In winter, use NSN 8340-01-075-4017 for an LCSS snow camouflage stake.

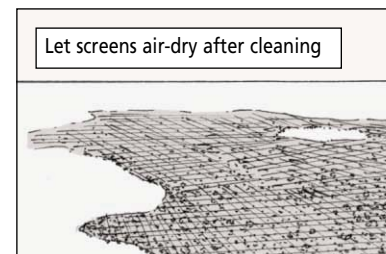
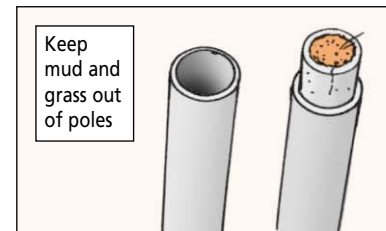
• Keep aluminum poles smooth by filing off any nicks or burrs with a metal file, NSN 5110-00-242-5384. They'll go together easier and won't snag the screens. The poles will also mate easier and weigh less if you keep mud, sand, dirt and other crud out of the ends. Wash and dry the poles before storing them.

• The poles aren't made for heavy lifting jobs, so don't use them as pry bars. They're for holding up screens—period.

• Before striking a screen, clear the ground underneath of all sharp objects, like stones and sticks. Otherwise, you'll end up with a torn screen when you fold it for storage.

• Keep screens clean by washing them in water with a mild detergent, NSN 7930-00-252-6797. Rinse the screens in clean water, then spread them out to air-dry.

• Operators should mend rips or tears as soon as they occur. That keeps the holes from getting larger and making the screen unserviceable.



## HERE ARE THE AVAILABLE REPAIR KITS FOR THE LCSS...

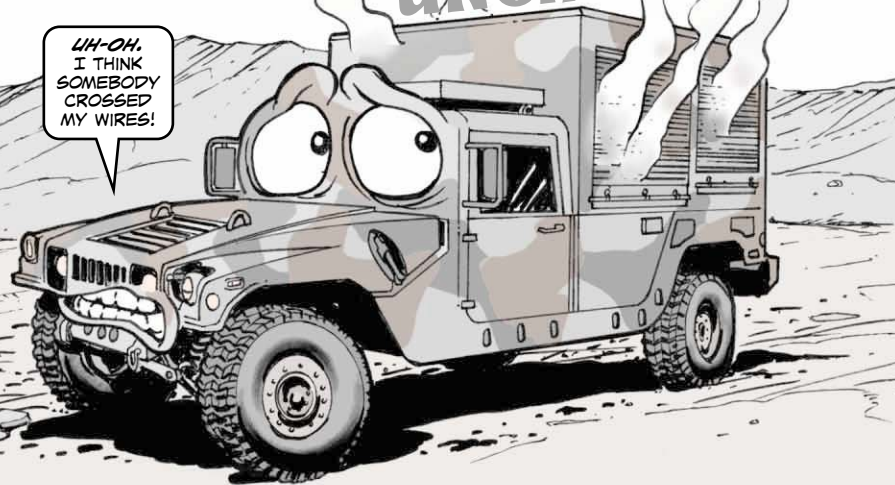
Repair kit	NSN 1080-
Radar scattering, desert (Type II, III & IV)	01-266-1834
Radar scattering, snow (Type IV)	01-266-1830
Radar scattering, woodland (Type II, III & IV)	01-266-1832
Radar transparent, desert (Type I)	01-073-3220
Radar transparent, snow (Type I)	01-081-1021
Radar transparent, woodland (Type I)	00-107-8563

CHECK OUT TM 5-1080-200-13&P, *LIGHTWEIGHT CAMOUFLAGE SCREEN SYSTEMS AND SUPPORT SYSTEMS*, FOR MORE INFO ON MAINTAINING YOUR CAMOUFLAGE SCREENS.



# GETTING WIRES UNCROSSED

UH-OH.  
I THINK  
SOMEBODY  
CROSSED  
MY WIRES!



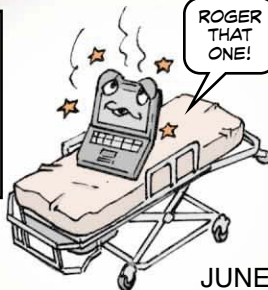
DURING MAINTENANCE  
ON THE EXPLOSIVE  
ORDNANCE DISPOSAL  
BODY (BEOD), THE  
WIRES FOR THE 12  
VDC (IT LOOKS LIKE  
A CIGARETTE  
LIGHTER) AND THE 24  
VDC OUTPUT SOME-  
TIMES GET CROSSED.

"THEN WHEN YOU PLUG A COMPONENT IN THE  
'LIGHTER' YOU GET 24 VDC **INSTEAD** OF 12  
AND THE COMPONENT CAN BE DAMAGED."



"SO BEFORE  
YOU USE  
THE BEOD  
AGAIN,  
CHECK THE  
WIRES TO  
THE 12 AND  
24 VDC  
OUTPUTS."

ROGER  
THAT  
ONE!



"THERE ARE TWO PLACES THE WIRES  
GET CROSSED: AT THE CIRCUIT  
BREAKER UNDER THE RADIO SPEAKER  
OR AT THE BATTERIES."

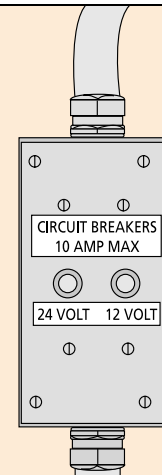
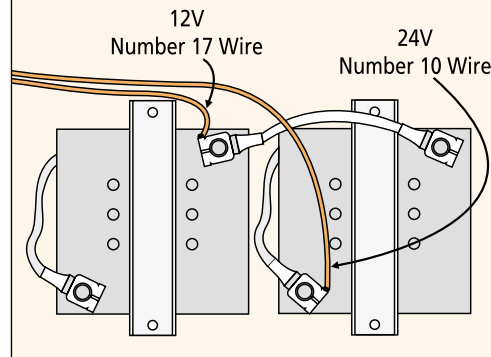
"AT THE CIRCUIT BREAKER, THE #17  
WIRE SHOULD GO TO THE 12 VDC  
BREAKER AND THE #10 TO THE 24  
VDC. SEE THE WIRING SCHEMATICS  
DRAWING IN THE COMMERCIAL MANUAL  
THAT CAME WITH YOUR BEOD."

IF THE WIRES  
**ARE** CROSSED,  
UNCROSS THEM  
LIKE THIS...



1. Disconnect batteries to prevent damage or injury.
2. Disconnect the #17 and #10 wires.
3. Connect the #17 wire to the 12 VDC breaker.
4. Connect the #10 wire to the 24 VDC breaker.

"AT THE BATTERIES, THE #17 WIRE SHOULD BE  
ATTACHED TO THE POSITIVE TERMINAL OF THE 12  
VDC BATTERY (THE ONE ON THE LEFT) AND THE  
#10 TO THE POSITIVE TERMINAL OF THE 24 VDC  
BATTERY. IF THEY'RE **NOT**, RECONNECT THEM."



IF THE REAR ELECTRICAL  
OUTLET IS PUTTING OUT  
24 VDC INSTEAD OF 12,  
THERE COULD BE A  
SHORT IN THE INVERTER.

CHECK THE VOLTAGE  
WITH A MULTIMETER. IF  
THE INVERTER IS BAD  
AND IS STILL UNDER WAR-  
RANTY, CONTACT THE  
MANUFACTURER ABOUT A  
REPLACEMENT.

THE MANUFACTURER'S  
ADDRESS AND PHONE  
NUMBER ARE LISTED IN  
THE BEOD COMMERCIAL  
MANUAL.





# ENGINES NEED DIFFERENT SPARK PLUGS

I JUST DON'T SEEM TO HAVE ANY SPARK...

...D'YOU THINK YOU COULD'VE USED THE WRONG SPARK PLUG?



The two engines used with the M17 decon use different spark plugs. If you use the wrong plug, the engine runs poorly.

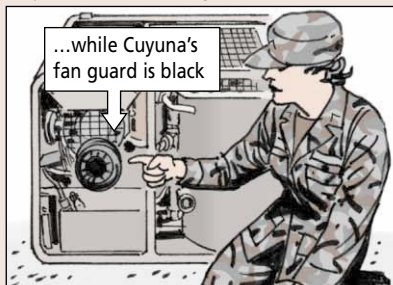
The JLO engine uses Champion RL87YC spark plug, NSN 2920-01-072-3380. Its thread is 1/2 inch long. The Cuyuna engine uses Champion RN3C spark plug, NSN 2920-01-142-3174. Its thread is 3/4 inch long. The ID number is printed on the plug's porcelain insulator.

An easy way to tell which engine your M17 has is to look at the fan guard. The JLO engine has a silver fan guard and the Cuyuna has a black guard.

JLO engine has a silver fan guard...



...while Cuyuna's fan guard is black



IF YOU HAVE BOTH ENGINES IN YOUR CHEMICAL COMPANY, MAKE SURE YOU KEEP THE DIFFERENT SPARK PLUGS SEPARATE IN BOXES MARKED JLO AND CUYUNA.



# More MOGAS Please

OOOH... I FEEL TERRIBLE.

I REALLY NEED TO CUT BACK!

ME, TOO. I GOT WAAAY TOO MUCH DIESEL LAST NIGHT!



Dear Editor,

The M17-series decon's burner is designed to run on all kinds of fuels, including diesel and MOGAS. But we've discovered that if the burner sees nothing but diesel, eventually its fuel valves will gel up. Then you won't be heating much water or doing much deconning.

MOGAS is the answer. If you run MOGAS through the burner at least 25 percent of the time—one can of MOGAS for every three cans of diesel—the fuel valve won't plug up. Remember, you need to use MOGAS at least part of the time for PMCS, too.

It's also good to get all the diesel fuel out of the burner at shutdown. The best way to do that is to run MOGAS through the burner for 5 minutes and then shut down normally. The burner pump will purge the diesel fuel.

MSG Kenneth Graham  
SGT Ramon Perez  
SPC Yonelvi Alvarez  
21st Chemical Co  
Ft Bragg, NC



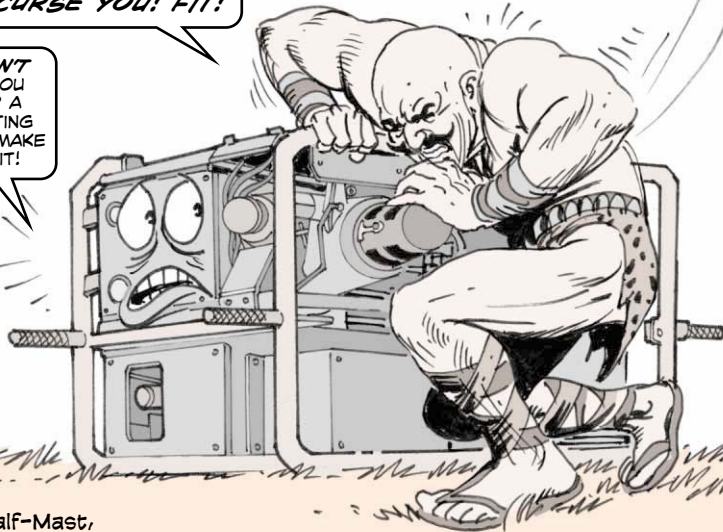
Run MOGAS through burner at least 25% of time



# MAKING NEW ENGINES FIT

**FIT, CURSE YOU! FIT!**

I *WON'T* FIT. YOU NEED A MOUNTING KIT TO MAKE ME FIT!



Dear Half-Mast,

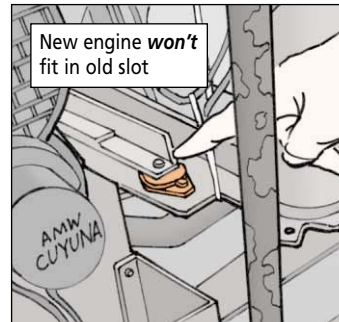
When we replaced the JLO engines in our M17 decons with the newer Cuyuna engines, NSN 2805-01-356-3654, the Cuyunas didn't fit right. The new engine was about 1/4 inch different in size, which caused belts to wear out fast. Is there anything we can do about this so we don't have to keep replacing belts?

SGT L.C.

Dear Sergeant L.C.,

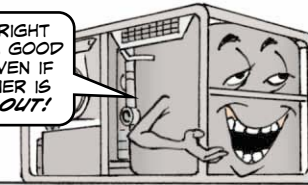
You can't slide the old JLO engine out and simply replace it with the Cuyuna. To mount the Cuyuna you need the engine mounting kit, NSN 2805-01-357-6566. The kit contains a new engine mount that takes care of the 1/4-in mounting offset. It also contains hardware, wiring and a transformer to manage the Cuyuna's higher alternator output of 37 VAC. If the transformer is not installed between the alternator and the electronic control module, the high voltage will damage the module.

*Half-Mast*



# NO BURNER, NO MISSION

IT SAYS RIGHT HERE, I'M GOOD TO GO EVEN IF MY BURNER IS BURNT OUT!



THAT'S *WRONG!* AND SO ARE YOU! YOU'RE NMC!



Dear Half-Mast,

TM 3-4230-228-10 doesn't mention anything about the M17 being deadlined if its burner doesn't work. But you can't decon very well without hot water. Is this a mistake?

SGT R.M.

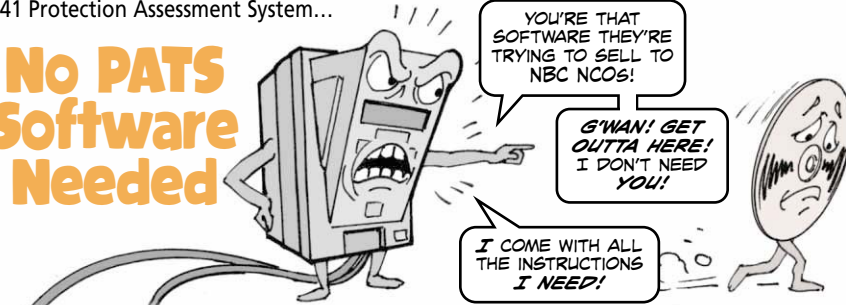
Dear Sergeant R.M.,

Yes, it is a mistake. SBCCOM Maintenance Advisory Message 02-11 stated that the M17 is NMC if the burner doesn't work. The next change to the -10 will add this information. Thanks for pointing this out.

*Half-Mast*

M41 Protection Assessment System...

## No PATS Software Needed



**D**o you NBC NCOs need the software and printer offered by the PATS manufacturer to effectively use PATS? Absolutely not.

The software, which isn't authorized by the Army, repeats information on using PATS that's already on the video or CD that comes with PATS and explains how to use it. If you don't have the CD, contact SBCCOM's David May for a copy. Contact him at David.May@SBCCOM.APGEA.army.mil or (410) 436-5926/DSN 584-5926.

The software also lets the user change the PATS pass/fail level, which could be dangerous if PATS passed a mask that didn't fit properly. PATS is set at the factory for a pass/fail level that makes sure the soldier will be protected by his mask.

The printer for PATS simply isn't needed.

So save your money, NBC NCOs. You've got all you need to use PATS without additional software and a printer.



# A VOYAGE THROUGH CYBERSPACE

THE FOLLOWING ARTICLE DESCRIBES THE ARMY KNOWLEDGE ONLINE PORTAL AS PRESENTED BY THE INTERNET EXPLORER BROWSER.

IMAGINE HOW HANDY IT WOULD BE TO HAVE YOUR OWN PERSONAL LIBRARY, A PLACE FILLED WITH INFORMATION ABOUT THE ARMY, YOUR CAREER, EDUCATION, FINANCES AND BENEFITS.

WELL, NOW YOU CAN HAVE YOUR OWN LIBRARY AT YOUR FINGERTIPS.

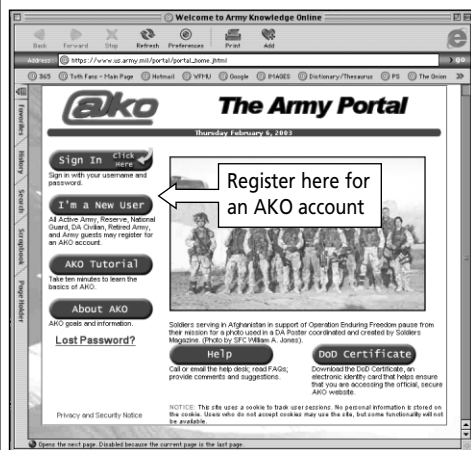
IT'S CALLED **ARMY KNOWLEDGE ONLINE (AKO)**, AND IT'S AS CLOSE AS A PERSONAL COMPUTER AND THE WORLD WIDE WEB.



PS 607

## Set Up an Account

To access the AKO home page, go to:  
<https://www.us.army.mil>



Once there, you'll need to register for an account. Click on I'm a New User. Enter the required information and submit it. After your account is activated, you can go back to the home page and sign in using your user name and your password.

## Gateway to the Army

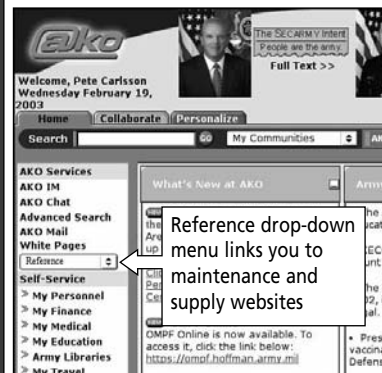
AKO is known as the Army Portal. It's a gateway with many links leading straight to information, services and online tools—all of it geared to you, the soldier.

Here are some of AKO's basic features:

- **Channels**, or small windows, that group similar kinds of information.
- **Personal Pages** that you create to fit your needs.
- **Email and Instant Messenger**.
- **Search Engine** that focuses on the .mil domain.
- **Online Tools and Storage Space**.

# WITH THE ONLINE WARRIOR

## World of Knowledge



One feature in particular can open up a world of knowledge for you. It's the Reference drop-down menu, located under "AKO Services" in the left-hand column on the home page. The menu has links to news articles and commentary about defense, travel regulations, legal services, desktop tools, pay rates and more. You'll find it especially helpful if you work in maintenance or supply. It's your doorway to web sites for publications, forms, Army regs, schools, education and careers.



## Publications and Forms

Here's a closer look at finding publications, regulations and forms through AKO:

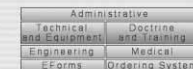
Open the Reference drop-down menu under "AKO Services." You'll see a number of links.

- Click on the Pubs & Forms link to find —Official DA, DOD, GSA and OPM forms.
- Doctrinal and training, engineering, medical, and technical and equipment publications.

Direct links to electronic publications and forms

## Official Department of the Army Publications and Forms

Official Department of Army (DA) publications and forms are managed by the Army Publishing Directorate (APD) under the direction of the Administrative Assistant to the Secretary of the Army (AASA). The Army uses the latest publishing technologies to produce high-quality, enhanced, electronic publications and forms. This is the latest collection of electronic Army publications and DA forms.



- Manuals links you directly to field manuals in the General Dennis J. Reimer Training and Doctrine Digital Library.
- Libraries links you to the Army Library Program and the Military Reading Room. From there, you can track other links to reading lists, E-Journals, Army newspapers, newsletters and publications such as *Armor*, *Army Aviation*, *Army Logistician*, *NCO Journal*, *Signal*, and *PS*, the *Preventive Maintenance Monthly*.
- The Regulations link takes you to a web page for administrative publications, including Army regulations.

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## Career and Education

AND HERE'S A LOOK AT AKO LINKS TO CAREER AND EDUCATION WEB SITES...



Open the Reference drop-down menu under "AKO Services." Click on Education. It takes you directly to the US Army Education home page. Next, open up Links on the top right-hand side of the page for a variety of educational opportunities:

EXPLORE EDUCATION AND CAREER WEBSITES.



- **eArmyU.com.** Web-based distance learning programs to help soldiers get a certificate or degree when traditional classroom courses are unavailable. Programs include technical, undergraduate and graduate courses.
- **The Army Correspondence Course Program.**
- **goarmy.com.** Military Occupational Specialties, and the major duties and the training required for them.

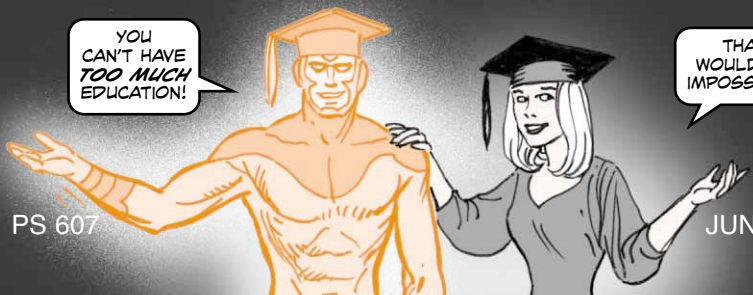
[http://www.armyeducation.army.mil/Related\\_Links.html](http://www.armyeducation.army.mil/Related_Links.html)



- **TRADOC.** Links to all the TRADOC schools, including Armor, Engineer, Field Artillery, Infantry, Intelligence, Signal and Transportation.
- **The Army Distributed Learning Program,** which includes MOS qualification courses.
- **Servicemembers Opportunity Colleges Army Degrees (SOCAD) Army Careers Degree Program.** Learn how to translate your Army training into college credit.

YOU CAN'T HAVE TOO MUCH EDUCATION!

THAT WOULD BE IMPOSSIBLE!



## U.S. ARMY EDUCATION



HOME  
ORGANIZATION  
INITIATIVES  
TESTING  
FAQ



BACK ON THE U.S. ARMY EDUCATION HOME PAGE, YOU'LL FIND A FEW MORE HELPFUL LINKS...

### • Money For College

Scholarship programs and financial assistance for education.

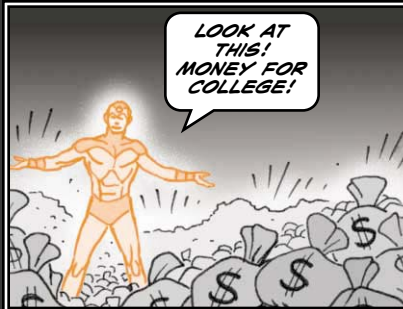
### • Credentialing

Learn how to meet civilian occupational certification and license requirements related to your MOS.

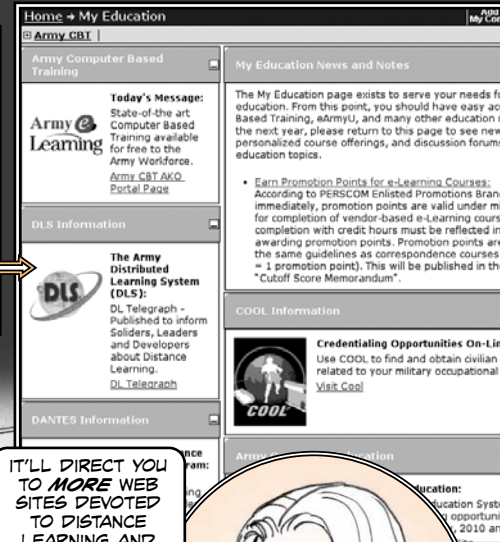
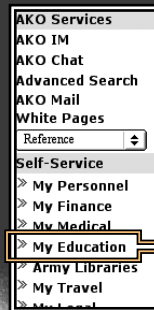
### • Earn a Degree

Transcript service, basic academic skills training, college credit for military service, earning a high school diploma.

LOOK AT THIS! MONEY FOR COLLEGE!



THERE'S ONE OTHER PLACE YOU MIGHT WANT TO LOOK-- CLICK ON THE MY EDUCATION LINK UNDER SELF-SERVICE IN THE LEFT-HAND COLUMN ON THE AKO HOME PAGE.



IT'LL DIRECT YOU TO MORE WEB SITES DEVOTED TO DISTANCE LEARNING AND COMPUTER-BASED TRAINING.





### M1-SERIES TANK CANNON CLEANING

If you're using the Azure Blue portable cannon cleaning kit, NSN 1025-01-407-6027, to clean the main gun tube on your M1-series tank—STOP! The high-pressure water used as part of the cleaning process will corrode the gun tube and reduce its life span. Water also gets into the main gun system, causing corrosion and damage to the breech mechanism, bore evacuator components, and firing circuits.

### IFF RADAR TEST SET

Units, hold on to your money! Don't buy an off-the-shelf Identification Friend or Foe radar test set directly from a manufacturer. The AMCOM TMDE folks will field the new IFF RTS, TS-4530/UPM, NSN 6625-01-483-7194, in Sep 04 as **free issue** test equipment. If you have questions about the test set, contact AMCOM's John Fields at DSN 987-2934, (256) 313-2934 or email

[john.fields@redstone.army.mil](mailto:john.fields@redstone.army.mil)

### ROWPU Hotline

If you have questions about the operation, maintenance and logistics support for the 600-GPH and 3,000-GPH reverse osmosis water purification units (ROWPUs), write to the ROWPU's Hotline e-mail address at:

[WaterSystems-ROWPU@tacom.army.mil](mailto:WaterSystems-ROWPU@tacom.army.mil)

### UH-60 Engine Control Quadrant Update

The connector plug (P105 & P106), NSN 5935-01-108-4483, shown on the control box parts list on page 39 of PS 601 is incorrect. It should be NSN 5935-01-109-7541.

### M1-SERIES TANK LRUs

Before storing or shipping line replaceable units (LRUs) from your M1-series tank, check to see if it has a shipping container. These specially designed containers prevent damage to expensive LRUs. A quick look at the parts manual is all it takes. Then order a container if the right one's not on hand.

### UH-60 External Fuel Tank Access Panel

Mechanics, Fig 122, Item 24 of TM 1-1520-237-23P-5, lists the wrong screws (NSN 5305-00-137-3043) to mount the external fuel tank access panel. The correct screw is NSN 5305-01-343-1185. Make a note until the TM is updated.

### FIBER OPTIC CABLE

Order 300 meters of CX-13295/G fiber optic cable with NSN 6020-01-220-5435. Order 1,000 meters with NSN 6020-01-208-1147.

### No Annual ACADA Wipe Test

Unlike the CAM/ICAM and M8A1 chemical alarm, the M22 ACADA does not need the annual wipe test to check for radiation leaks. The ACADA needs to be wipe tested only when the radioactive source module is removed from the source assembly. And that can be done only at depot. So **do not** turn your ACADA into support for a wipe test. It's not needed.

### AVLB Engine

Use NSN 2815-01-166-2051 to order a new engine and container for your AVLB. The NSN shown for Item 1 in Fig 1 of TM 5-5420-202-24P and TM 5-5420-226-24P is no longer available.

### UH-60 Cargo Hook Impulse Cartridge

Need an NSN for the Black Hawk cargo hook impulse cartridge? Order NSN 1377-01-211-7211. The current cartridge, NSN 1377-01-254-1683, is no longer available in the supply system.



### BRADLEY TURRET JAMS

Clean up brass cartridges from the catchers and the floor at every opportunity. Bradley crewmen in Iraq have had several turrets jammed by loose brass. Not good when you're engaging the enemy!

### NEW MINE CLEARING BLADE MOTOR

Use NSN 6105-01-502-9448 to order a new lifting motor for your mine clearing blade. This motor has been tested and approved for use as a replacement for the current motor, NSN 6105-01-277-0295. You'll get the new motor faster.

### OE-254/GRC Mast Section NSN

Mast section, NSN 5985-01-072-8066, is now NSN 5985-01-324-3463. Many of you are still ordering under the old NSN and entering an advice code of 2F—"obsolete, but still required." **Stop it!** Your request will just be rejected. Use the new NSN and the mast sections will come your way.

DISTRIBUTION: To be distributed in accordance with the initial distribution number (IDN) 340312, requirements for TB 43-PS-Series.

Would You Stake Your Life *right now* on  
the Condition of Your Equipment?

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when needed.*

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